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ABSTRACT

Five papers on curricula for high risk and handicapped infants are presented, along with information on 63 curricula, 17 publications, and organizational resources. The first chapter, "Theoretical Bases and Pragmatic Considerations" (C. Dunst) examines major philosophical and theoretical perspectives and problems in infant intervention approaches. Chapter 2, "Infant-Centered Curricula" (N. Johnson, K. Jens), discusses curriculum content, assessment and teaching strategies, and instructional material evaluation. In Chapter 3, "Focus on the Family" (J. Swanson), parent/child interaction and parents as teachers are considered. The fourth chapter, "Contingency Intervention" (R. Brinker, M. Lewis), discusses the use of operant conditioning with moderately handicapped and multiply handicapped infants. Chapter 5, "Intervention with the Very Youngest" (N. Sweet, et al.), describes the characteristics of premature, ill, and disabled newborns and considers developmental intervention. The remaining bibliographic sections were developed by J. Anderson and J. Cox. Sixty-three curricula are arranged alphabetically by title and include author, publication data, format, cost, ordering information, and a description of content and organization. In addition, short descriptions and cost availability information are presented for 17 resource publications on handicapped child screening, assessment, and curricula. Finally, 17 national organizations that can provide information about infant intervention and special education are listed with addresses and telephone numbers. (SEW)

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curricula for high-risk and handicapped infants

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Foreword

By law, four states provide special education as soon as the child is identified as in need of such services. An additional 17 states permit special education from birth for all handicapping conditions (Smith, 1980; Trohanis, Woodard, & Behr, 1981). This group of programs for infants is growing rapidly in response to the increasing volume of literature in support of early education programs and legislative mandates brought about by educators and parents. The question is not whether to serve infants, but how best to serve them and what the content of such service should be (Bricker, Seibert, & Casuso, 1979). Service providers have expressed a need to identify appropriate materials for working with very young handicapped children.

The original intent of this book was to present reviews of all infant curricular materials. As the project evolved, it became apparent that a more focused approach would be more useful to infant educators who must locate and select curricula. The volume of infant curricular materials being produced is vast, as is the variety of instructional programs, activity guides, and assessment instruments called curricula. Thus, the task arose to determine which of these materials would be included in the bibliography. Specific questions surfaced: Is the material a curriculum? How specifically does it address the target populations—high-risk and handicapped infants? Is it appropriate for infants from birth to three? Difficulty answering these questions led to the inclusion of the readings chapters. And, the book took its present two-part form.

Part I of this book presents discussions of curricular topics. Chapter 1 defines and describes the theoretical and philosophical bases of curricula for young children. Chapters 2 through 5 concern directions in infant curricula development and describe infant programs and curricula.

Part II has two chapters: an annotated bibliography of curricula for high-risk and handicapped infants, and supplemental materials and organizational resources.

The primary goal of this document, then, is not to present a catalogue of infant curricula. Rather, it is to define for the educator the underlying philosophical and theoretical bases of curricula for high-risk and handicapped infants, the practical considerations in applying curricula to instruction for infants, and to acknowledge the challenges we face in developing appropriate and effective intervention for these infants. The inclusion of the bibliography is not to suggest the materials included can be used cook-book fashion to "treat" high-risk or handicapped infants.

This volume represents a plea for responsible and thoughtful interventive efforts with very young children. In the final analysis, as always, the educator is the curriculum.

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Part I

Issues

Introduction

In the broadest sense, a curriculum is what is taught, how it is taught, and who teaches it. But, *who is taught* perhaps shapes curriculum most. This book considers curriculum for a very special group: handicapped and high-risk infants.

Since environmental factors—social and physical—affect development (Sameroff & Chandler, 1975), appropriate curricula may target the child, the caregiver, or both. Further, infant curricula should consider these unique ideas: this developmental period permits a *preventive* (and remediative) posture for intervention; because of the dependent nature of the infant, actions of the caregiver and extended family are crucial to developmental progress; and, the rapid neurological and physical maturation in infancy present special challenges and opportunities for the educator. At very young ages, ramifications of developmental disorders might not be apparent.

The readings that follow this introduction will provide the educator of high-risk and handicapped infants with a broad conceptualization of infant curricula, a thorough knowledge of problems, and some current directions in infant curriculum development.

Curricula have been defined and dissected in various ways: philosophical or theoretical bases or perspectives; instructional strategies, content, organization, or sequencing; and target of intervention (Bagnato & Neisworth, 1981; DuBose & Kelly, 1981; Guess et al, 1978; Dunst, 1977; Jens, Johnson, Gallagher, & Anderson, 1980). The user must understand these characteristics and features of curricula to match intervention to the child's age and the characteristics of the child and the family.

In Chapter 1, "Theoretical Bases and Pragmatic Considerations," Carl Dunst presents the structure for understanding infant curricula strategies and techniques. And, he defines major philosophical positions and theoretical perspectives. The instructional derivatives of these philosophical and theoretical bases are described. Dunst discusses the problems of concept, content, and organization of many infant curricula, and outlines considerations for future development of infant curricula and intervention. The next four chapters concern current directions in infant curriculum development, which take into account the uniqueness of the infancy period.

Many curricula purport to encompass the birth-to-three (-four, -five, or -six) developmental range. An important distinction should be made between curricula for a developmental range of birth to three and curricula for a chronological range of birth to three. The former tend to concern themselves with older developmentally delayed children who, when measured by normative standards, *function* in the birth-to-three range. The content and number of objectives in some of these curricula are limited for intervening in the first three chronological years. The latter curricula emphasize developmental intervention for infants who fall chronologically into the birth-to-three range, *and* who are at risk for developmental delay.

A survey reported by Jens, Johnson, Gallagher, and Anderson (1980) indicates many curricula for infants have few items for infants in the first year of life. This may be in part the result of the fact that service providers are not confronted with many children in this age range. A recent survey (Anderson & Black, 1981)

of states that mandate special education from birth revealed that referrals and enrollment weighted toward the older toddlers in birth-to-three programs. In Chapter 2, "Infant-Centered Curricula," Nancy Johnson and Ken Jens define the scope and content of infant curricula and explore assessment and teaching strategies. The authors emphasize the need for the educator to be able to evaluate instructional materials. And, they include guidelines for such an evaluation.

The infant does affect the environment (Lewis & Rosenblum, 1974), however, the influence is limited. The infant generally is dependent on the environment and has a limited response repertoire with which to intervene. So, the most efficient strategy for developmental intervention at very young ages may be to manipulate the social or physical environment. Jennie Swanson, in Chapter 3, "Focus on the Family," explains the rationale for intervening with caregivers and the social environment and describes useful curricula. The physical environment particularly is amenable to intervention when the infant's handicaps prevent him or her from engaging that environment in typical ways. The interventionist should recognize motor-impaired infants' limitations and seek to prevent secondary handicaps. Brinker and Lewis describe one effort to develop curricula to prevent learned incompetence. In Chapter 4, "Contingency Intervention," they advocate providing opportunities for active learning by describing and building on infants' competencies.

Neonatalogy is a relatively new medical specialty, and benefits of building relationships between medical and educational service providers have been noted (WESTAR and TADS, 1981). Sweet et al describe the parameters of neonatal curricula in Chapter 5, "Intervention with the Very Youngest." The authors describe the characteristics of premature, ill, and disabled newborns and argue for developmental intervention procedures which take into account the organizational and response capabilities of the infant, and social and environmental variables. The authors use examples of neonatal intervention to illustrate principles outlined in the chapter.

The five chapters in Part I of this book complement each other; these ideas pervade:

- Infants at risk for or having developmental difficulties are unique individuals.
- All infants are competent to some extent.
- Services for the infant must include intervention with the family.
- Infant intervention permits a preventive and a remediative posture.

The ideas presented in Part I are a background to a clear understanding of the material in Chapter 6, "Bibliography of Curricula," and Chapter 7, "Supplemental Resources" (see the Introduction to Part II, page 55).

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Chapter 1

Theoretical Bases and Pragmatic Considerations

by Carl J. Dunst

Whether stated implicitly or explicitly, curricula are derived from one or more philosophical positions (Dunst, 1981; Lambie, Bond, & Weikart, 1975; Stevens & King, 1976) and adhere to certain theoretical viewpoints concerning the nature of development and learning (Levitt, 1968). Adherence to particular philosophical and theoretical perspectives in turn has implications for acceptance of beliefs concerning the aim of education and intervention, the nature and content of a curriculum, the roles of teacher and child in the learning process, and other corollary issues.

This chapter examines those ideologies that have influenced the construction of infant curricula procedures and strategies. In the first section of the paper, the corollaries of different ideologies are discussed to illustrate that intervention strategies, including infant curricula, are fundamentally a semblance of the philosophical and theoretical positions from which they have been derived. In the second section, a number of different approaches to infant intervention are discussed to illustrate the relationships between philosophical/theoretical viewpoints and instructional derivatives. In the third section, several pragmatic considerations pertaining to the design and implementation of infant curricula are discussed. Special attention is paid to problems underlying the construction of infant curricula procedures. The chapter concludes with proposals for consideration in infant intervention.

Theoretical Perspectives

Historically, three philosophical and theoretical ideologies—Romanticism, Progressivism, and Cultural Transmission—have dominated educational decision-making for Western Man (Kohlberg & Mayer, 1972). A fourth ideology, Holism (Lewin, 1931, 1936), is beginning to have a major impact on contemporary thoughts regarding early intervention practices. Holism is the foundation for an ecological perspective of development (Bronfenbrenner, 1979) and intervention (Cantrell & Cantrell, 1980; Hobbs, 1966, 1975). Table 1 presents a number of basic corollary model issues associated with each of the four philosophical-theoretical ideologies.

Romanticism

The ideology of Romanticism is derived primarily from the philosophy of Jean Jacques Rousseau (Rousseau, 1773/1955). This position asserts that what comes from within the child is the most important aspect of development. The philosophy is based on the belief that children are essentially born "good" and "uncorrupted," and that the role of the environment is simply to be permissive enough to allow inner feelings to unfold and be expressed without adult interference (Hall, 1901). This philosophy stresses that children should *develop* and *grow* under the guidance of nature.

The psychological theory associated with Romanticism is the maturational model—the unfolding of inborn and innate patterns of behavior according to a predetermined rate and in a predetermined order. According to this view, the appearance of behaviors occurs at times preprogrammed by an individual's biological clock. Development is viewed as being genetically and organically guided. Arnold Gesell (e.g., Gesell & Ilg, 1949) was the major proponent of this developmental perspective.

Given the emphasis on the inner self, it is easy to see how motivation is considered *intrinsic* and *static*. Growth, being spontaneous, is educed as the reason a child acts.

Based on this ideology, the aim of education is to allow self-expression of inner feelings. The child is viewed as an active, self-directed organism who behaves because of biological predispositions. Curricula are devised to include experiences designed to enhance and foster the child's natural tendencies toward self-expression. The role of the teacher is to create a warm, positive environment.

The corresponding preschool curriculum derived from the Romanticism-Maturational position is the child-centered, traditional, nursery-school approach

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Table 1

The Four Major Philosophical-Theoretical Ideologies and Their Corollary Issues

Corollary Issues	Philosophical-Theoretical Ideologies			
	Romanticism	Progressivism	Cultural Transmission	Holism
Psychology	Maturational	Interactionist	Environmental-Learning	Ecological
Concept of Development	Genetically Predetermined and Ordered	Sequential, Hierarchical and Integrative	Additive	Progressive Differentiation
Nature of Motivation	Intrinsic/Static	Intrinsic/Metastatic	Extrinsic/Reinforcement	Extrinsic/Evocation
Aim of Education/ Intervention	Self-Expression	Knowledge Acquisition	Skill Transmission	Provide Environmental Support
Nature and Role of the Child	Active: Self-Directed	Interactive: Initiates Interactions/Engages in Active Experimentation	Passive/Reactive: Responds to Cues and Discriminative Stimuli	Dynamic/Interactive: Discovers, Sustains, Restructures, and Alters Environments
Nature of the Curriculum	Enhance Emotional Expression and Curiosity	Enhance Organism—Environmental Encounters	Programmed Instruction: Teach Skills, Facts, Behaviors, etc.	Enhance the Acquisition of Setting-Specific Functional Behaviors
Role of Teacher	Create Warm, Positive, and Stimulus-Rich Environment	Structure Content and Order of Experience	Engineer Learning Environment	Mediate "Systems Level" Changes
Mode of Instruction	Enrichment	Guided Learning	Directed Learning	Contextual Learning

(Lambie et al, 1975; Weikart, 1972). According to Stevens and King (1976), the emphasis of this approach is on the development of the whole child in a non-oppressive, enriched environment supportive of natural development and learning.

Progressivism

This philosophical ideology is based substantially on the viewpoints expounded by John Dewey (1938). The ideology holds that education should nourish and enhance the child's natural interactions with the environment. This philosophical position is rooted in the belief that progressive changes in a child's cognitive-adaptive abilities occur as a direct function of engagement in resolvable problem-solving situations. Development is viewed as progressing through invariant ordered sequential stages in which initially acquired behaviors serve as the basis and foundation for acquisition of higher-level behaviors. Jean Piaget's (1970) interactionist, developmental theory corresponds to the Progressive ideology. According to this theory, cognitive-adaptive abilities are acquired based on reorganizations in thinking processes resulting from organism-environmental encounters. *Process* rather than *product* learning represents the major focus of developmental change (Levitt, 1968).

According to the Progressivism ideology, learning and development occur only to the extent that experiences encountered by the child can be related (i.e., assimilated) to cognitive structures already established (Piaget, 1964). Motivation, though considered primarily intrinsic, varies and changes at different levels of development (Hunt, 1971). Progressively more complex challenges with which the child is confronted and can solve, motivate the child to learn. Motivation is maximal when the discrepancy between the solutions to various problem-solving situations and the child's level of cognitive-adaptive abilities is optimally incongruent (Hunt, 1961).

The aim of education of a Progressivism ideology is to provide experiences which enhance the acquisition of knowledge so that a child will attain in adulthood the highest levels of development possible. The child is viewed as an interactive organism who initiates and responds to the environment (both animate and inanimate), engages in active experimentation, and otherwise strives toward understanding the workings of the world. Curricula consist of progressively more complex situations, events, and resolvable but genuine problems or conflicts that enhance the acquisition of cognitive-adaptive competencies. The role of the teacher is to structure, order, and introduce these types of experiences so that the child must engage in active thinking, which leads to active changes in the child's

patterns of cognitive adaptations.

The approach to education derived from the Progressivism-Piagetian ideology, the open framework curricula, was termed by Lambie et al (1975): "Programs embracing this view... are committed to child-initiated learning and a style of... (interaction)... between teacher (be it parent or professional educator) and child in which the teacher extends and supports the child's involvement in acquiring competencies in dealing with everyday problems" (p. 223).

Cultural Transmission

This philosophical position has its roots in the writings of John Locke (1700). According to Locke, infants are likened to "blank slates" upon which the environment transcribes what it considers of cultural importance. The associated psychological approaches akin to the Cultural Transmission ideology are the association-learning and environmental theories. Development is considered an expression of the accumulation of learned behaviors. *Product* rather than *process* learning constitutes the focus of intervention.

Motivation is considered to be *extrinsic* and *metastatic*. Children are reinforced and rewarded for emitting culturally valued behaviors, and stimuli that serve as reinforcers change across a person's life-span. B.F. Skinner (1974) has been the primary advocate for this perspective of development and learning.

According to this ideology, the aim of education is to transmit to the child the information, skills, rules, and values that are considered important and socially adaptive. The child is viewed as a passive organism who reacts and responds to external cues and stimuli which elicit behaviors and signal the availability of reinforcements. Curricula consist of a compilation of skills, behaviors, facts, etc. that are culturally valued and taught (transmitted) directly to the child. The role of the teacher is to engineer the classroom and other learning environments in a manner which optimizes the acquisition of targeted behaviors.

Weikart (1972) associates the programmed learning approach to early education with the Cultural Transmission ideology. "Such programs are characterized by 'expert' teachers who implement highly programmed curricula and motivate and manage students by employing behavior modification techniques or 'traditional' discipline" (Lambie et al, 1975, p. 272).

Holism

This ideology is rooted in the German-European tradition of conceiving the child as a whole integrated organism whose behavior is affected by, and has meaning within, the context in which the child is embedded (Reese & Overton, 1970). Holism finds its most articulate formulations in the early writings of Kurt Lewin (1931, 1936). Its contemporary conceptualization is perhaps best articulated by Urie Bronfenbrenner (1979).

The theoretical perspective that has emerged from the Holism ideology is ecological psychology (Barker, 1968; Bronfenbrenner, 1979). In this framework, children are viewed as functioning and developing as members of different ecological settings and units. According to Bronfenbrenner (1979), ecological settings and units may be a nested arrangement of concentric structures or "life spaces" (Lewin, 1931, 1936), each embedded within one another. At the innermost level is the developing child and nuclear (mother, father, and siblings) and extended family members. Both family units are embedded in broader ecological systems consisting of blood and marriage relations, friends, and other acquaintances. These formal and informal kinship systems are embedded further in larger social units, including neighborhoods, churches, social organizations, and the parents' workplaces.

From an ecological perspective, the *settings* in which a child interacts, and the patterns of *activities*, *roles*, and *interpersonal relationships* experienced by the child are considered to affect development directly and indirectly (Bronfenbrenner, 1979; Cochran & Brassard, 1979). Direct influences come to bear upon the child "through the range and variety of persons with whom the child has contact on a recurring basis, either together... or independently" (Cochran & Brassard, 1979, p. 602). Less obvious but no less powerful are indirect influences that bear upon a child's development. According to Bronfenbrenner (1979), "a person's development is affected profoundly by events occurring in settings in which the person is not even present" (p. 3). It is now known, for example, that the nature of social support provided to a child's parents by the latter's social support network is correlated with positive interactions between mothers and their preschool-aged children (e.g., Hetherington, Cox, & Cox, 1976).

An ecological perspective considers development to be a progressive differentiation of a person's conception and knowledge of ecological environments and the capacity to discover, sustain, restructure, or alter environments at levels of similar or greater complexity in form and content (Bronfenbrenner, 1979). That is, development is considered to have occurred if the form and content of a person's activities, roles, and interpersonal relationships become progressively more differentiated as a function of direct and indirect experiences. Motivation is considered to consist of a host of

forces "emanating not from within the person but from the environment itself. Objects, activities, and especially other people send out lines of force, valances, and vectors that attract and repel, thereby steering behavior and development" (Bronfenbrenner, 1979, p. 23). Motivation, though primarily extrinsic in nature, is conceived of as being evocative in nature (Madsen, 1973). That is, behavior is considered to be as much *evoked* by stimuli as reinforced by them.

The aim of intervention based on the Holism ideology, is to mediate changes in the *context* in which a family lives (Bronfenbrenner, 1975). *Provision of support* to the child, family, and other social network members (Hobbs, 1975) enables the child and caregivers to assume roles and engage in activities and interpersonal relationships that maximize the child's growth and development. From an ecological perspective, the child is a dynamic, interactive organism whose behaviors are evoked by settings and persons and, in turn, are used to invoke objects, persons, and events. Interventions are designed to ensure activities, experiences, and events that enhance a child's acquisition of functional and essential behavioral competencies. However, in an ecological approach, the child is *not* the sole focus of intervention efforts. Rather, the emphasis is on the "child and the settings and the individuals within these settings that are a part of the child's daily life" (Hobbs, 1975, p. 114). The role of an interventionist is to mediate changes leading to progressive differentiation in a child's development—particularly through "systems level" interventions aimed at the child, settings, and significant others using a variety of different strategies and techniques.

The Holism-Ecological ideology suggests a broad-based approach to intervention (see especially Cantrell & Cantrell, 1980; Hobbs, 1966). Its implications in terms of infant curricula are just being realized (e.g., Dunst, 1981; Mahoney & Weller, 1980). Some examples of the types of intervention strategies and techniques derived from an ecological conceptualization of development are described in the following section.

Strategies and Techniques

Each of the four ideologies described above has direct implications with regard to intervention strategies and techniques. Curricula and intervention procedures derived logically from these ideologies are reviewed below to illustrate (a) the relationship between theoretical perspectives and instructional derivatives and (b) the methods of intervention and mode of instruction that each ideology suggests.

Enrichment

Enrichment, stimulation, unstructured free play, and discovery learning are several of the terms that are instructional derivatives of the Romanticism ideology. All these terms imply a general, stimulus-rich approach to intervention. That is, these modes of intervention suggest that ample amounts and variations of stimulation are sufficient to evoke biological predispositions.

An enrichment approach to infant intervention is designed to provide the types and range of experiences which are assumed to influence the relative ease with which development unfolds. Typically, enrichment involves providing infants with experiences that "expand one's horizons" about the world. The function of stimulation and experiences is to exercise the body and senses. So, for example, providing a 2- or 3-month-old infant with visual and auditory stimulation in the form of a wind-up mobile would be considered one type of experience sufficient for the child to learn about sounds and movement.

Guided Learning

The principal mode of instruction derived from the Progressivism ideology is perhaps best termed *guided learning*. In this approach, the child is given ample opportunity to interact with the environment, but the *types of experiences afforded the child are carefully selected*, and the child is guided through development by introducing experiences that challenge the child's capacity to think and solve problems.

Infant curricula derived from the Progressivism-Piagetian ideology typically consist of progressively more complex activities and experiences arranged according to distinct levels of development (Bricker & Bricker, 1976; Dunst, 1981). The guided learning approach is designed to enhance the child's acquisition of competencies characteristic of these different levels of performance. Moreover, the ultimate goal is to increase the child's capacity to think symbolically. According to Piaget (1951), one of the paramount attainments in the infant's acquisition of cognitive competence is the differentiation of a *signifier* from the *signified*. Signifiers are words, images, mental processes, cognitive operations, etc. which symbolize objects, events, actions, etc. (e.g., the child's use of the words "want juice" to request a drink) in the *absence* of the actual thing that is signified. So, for example, if a child were being taught the salient/functional aspects of a spoon, he or she might be given a bowl of pudding and systematically taught that an adult-size spoon, child-size spoon, plastic spoon, wooden spoon, flat spoon-shaped

stick, or tongue depressor could be used to eat the pudding—the objective being to get the child to successively *abstract* the salient features of an object which make them *signifiers* for a spoon.

Direct Learning

In this approach, derived from the Cultural Transmission ideology, the child is taught preselected targets by being reinforced for emitting these behaviors or successive approximations of them. Typically, infant curricula consist of a taxonomy of behaviors identified as important for the child to learn, and ordered according to the sequence in which they are to be taught. Using reinforcement principles, the child is then systematically taught the behaviors comprising the content of the taxonomy. It is a directed learning approach because: the behaviors are chosen by the person teaching the child; reinforcement is contingent upon a preselect level of performance; and reinforcement occurs only in the presence of the person instructing the child.

Most often, a directed learning approach to intervention is implemented under highly structured circumstances. For example, the child's understanding and recognition of the word "cup" typically is taught in a two-choice discrimination task where the child is reinforced for identification of the cup when paired with another object. In this approach, it is assumed that a behavior in one stimulus situation will be generalized and emitted in the context of novel but similar stimuli.

Active Learning

This approach is derived from the Progressivism and Cultural Transmission ideologies. It is based on the belief that infants are active organisms who strive to understand and engage in the predictable use of their behavior. This ability, termed contingency awareness (Watson, 1966, 1972), refers to the relationship between an infant's production of a behavior and the consequences of the behavior. For example, contingency awareness is manifested when an infant shakes his or her body vigorously to make a mobile attached to a crib move, or when an infant uses smiling or generalized body excitement to sustain an interaction with the caregiver. According to Dunst (1981):

The ability to gain and maintain control over reinforcing consequences, and the ability to understand that one can do so, makes the infant an active *learner and participant in his or her world as opposed to a passive recipient of stimulation.* (p. 60)

Studies designed to examine the ease at which infants can learn response-contingent behaviors produced clear and convincing results. In learning situations where the consequences of an infant's actions are linked directly to the child's behavior, the acquisition of contingency awareness has been enhanced considerably (see Hulsebus, 1976; Millar, 1976; Sameroff & Cavanagh, 1979, for review). Lipsitt (1970) attributes the rapid acquisition of contingency awareness in active learning situations to the fact that reinforcement occurs immediately and continually as a function of the infant's level of responding. Brinker (this volume) describes in more detail strategies used to implement an active learning approach to intervention.

Ecological Approaches

The Holism-Ecological ideology, because of its systems-oriented conceptualization of development, suggests a varied approach to infant intervention. Several strategies and techniques derived from this ideology follow. However, these are by no means exhaustive examples of the types of interventions that are logically derived from an ecological perspective of development.

Contextual learning refers to enhancement of behaviors in situations and settings in which the behaviors ordinarily manifest and function (Dunst, 1981). In this approach to intervention, environmental information is seen as having a profound effect on the child's acquisition of knowledge and competencies leading to the progressive differentiation of the form and context of his or her behavior. For example, contextual-based intervention would help the child's understanding of the word "cup" and his or her use of the instrument. The interventionist might have a child hand a cup to an adult following the adult statement: "I have some juice for you. Give me your cup." Completion of the request would be followed by pouring juice into the cup, and the child drinking the juice. This sequence of activities, roles, and interpersonal interactions involves the functional engagement in the targeted behavior and the natural reinforcement of the chain of events (see Dunst, 1981).

Incidental learning and teaching involves the arrangement of environments that evoke child interactions with objects and people, the elaboration of the child's behavior through adult responsiveness to ongoing activity, and the reinforcement of the response elaboration of the child (Hart & Risley, 1974, 1975, 1978, 1980). In this approach, objects, events, and activities (e.g., moving into an infant's line of vision) evoke behavior (e.g., smiling, vocalization, generalized excitement) from the child. Adult responsiveness to the ongoing activity is used then to elaborate and

expand on the child's behavior (e.g., imitating a particular sound to elicit further vocalizations from the child). Further attention and responsiveness reinforce the ongoing behavior of the infant and evoke further elaboration from the child. As noted by Hart and Risley (1980), in incidental teaching...

The adult must focus on keeping the child initiating rather than on a criterion for a specific response topography. This means keeping the incidental teaching interaction brief, positive, and focused on the child-selected reinforcer. (p. 409)

This recommended procedure elaborates the form and content of the child's activities, roles, and interpersonal relationships—an indication that development has occurred (Bronfenbrenner, 1979).

Joint action. Besides arranging settings and contexts to enhance and elaborate the form and content of a child's ongoing behavior, arranging interactions between the infant and caregivers is another strategy suggested by an ecological perspective. In this approach, activities are used to establish joint action between dyad members in which participants engage in different but complementary behaviors (Bronfenbrenner, 1979). Joint activity dyads are characterized by reciprocity between participants—the activities of each member are coordinated with the other's. According to Bronfenbrenner (1979), reciprocity...

...with its concomitant mutual feedback generates a momentum of its own that motivates the participants not only to persevere but to engage in progressively more complex patterns of interaction.... The result is often an acceleration in pace and an increase in the complexity of learning processes. (p. 57)

For example, a simple activity like a child placing blocks into a bucket could be modified so that the adult retains the blocks and hands them one-at-a-time to the child in an orchestrated manner so the child can place them into the container. During the exchanges, the adult might delay handing a block to the child to elicit a "request" behavior—thus elaborating and increasing the complexity of the activity. Simple variations in games like this have a profound effect on elaborating the form and content of a child's ongoing activity. Goldberg (1977) specifies the parameters for fostering effective interactions between infants and their caregivers.

Social support. The three strategies just described are examples of how *direct* interventions can influence the developing child. An ecological perspective suggests further that *indirect* influences can have a powerful effect upon a child's development. Ample evidence exists to support this contention (see e.g., Cochran & Brassard, 1979).

While a detailed discussion of systems-level interventions are beyond the scope of this paper (see Cantrell & Cantrell, 1980; Hobbs, 1967), an ecological perspective of development makes such indirect interventions viable targets and primary considerations in the design of broad-based efforts. For example, based on studies which indicate that the birth of a first child is a crisis to some (e.g., Hobbs, 1965; LeMasters, 1957), but that the reintegration of extended family members into the nuclear unit buffers this stress (Litwak, 1960), natural social support networks become viable targets of intervention, especially in response to the birth of a handicapped or retarded child. Such social support to parents presumably would have positive effects on interactions between the parents and their child, which in turn would be expected to influence the child's development.

Pragmatic Consideration

In this section, several pragmatic ideas concerning infant curricula are discussed. Issues pertain to pitfalls in the conceptualization, construction, and implementation of infant intervention strategies. These discussions are designed to illustrate real and potential problems and shortcomings in current approaches to infant intervention.

Noncontingent Stimulation

Many infant curricula, recommend wind-up mobiles and similar devices which produce noncontingent stimulation (music, a mobile turning, etc.) to enhance visual and auditory attending behaviors. Several studies have found, however, that exposure to the redundant, nonintermittent stimulation provided by these devices produces a gradual decrease rather than an increase in attention (Foster, Vietze, & Friedman, 1973; Vietze, Friedman, & Foster, 1974). The long-term impacts of exposure to response-independent stimulation are not known, but one could hypothesize that such events might have detrimental effects and inhibit subsequent learning (see Watson, 1971, for evidence to support this contention), and that the longer the exposure to noncontingent stimulus events, the more difficult is total recovery. In fact, it may be that exposure to large amounts of different response-independent stimulation leads to the infant learning that such stimulation is uncontrollable and available independent of his or her response topography. Such are the conditions of learned helplessness (Abramson, Seligman, & Teasdale, 1978). Certainly, at least, we must be cautious about exposing infants to noncontingent stimulation, particularly over long periods of time. Additionally, we must reconsider

seriously the inclusion of response-independent activities in infant curricula.

Synthesis of Conflicting Ideologies

Regarding the different ideologies discussed above, Reese and Overton (1979) contend there are distinct and irreconcilable differences between the various philosophical and theoretical perspectives. They state: *Theories built upon radically different models are logically independent and cannot be assimilated to each other. They reflect representations of different ways of looking at the world and as such are incompatible in their implications (and applications).* (p. 144)

The developers of many infant curricula have made an implicit and unrecognized attempt to synthesize basic tenets of the Romanticism and Cultural Transmission ideologies, but these viewpoints are radically different. Persons attempting this synthesis generally begin with the premise that principles of behavior technology can be used to help acquisition of targeted behaviors. However, lacking a system of classifying behaviors in one or more domains of infant development, implementors of this approach have borrowed the most readily available compilation of infant behaviors, namely, traditional infant developmental and intelligence test items (as an examination of the reference sections of such curricula show). This is understandable but most unfortunate since many infant test developers have adopted viewpoints that development is genetically predetermined and ordered, and they have attempted to construct their scales accordingly (see e.g., Gesell, 1925; Griffiths, 1954; Shirley, 1933). The outcome of the synthesis of these two conceptualizations is an *additive* but *genetically predetermined* viewpoint of development. While this may be a plausible conception of development, intervention is not a logical derivation. Perhaps this synthesis is more apparent than real. Nonetheless, little attention has been paid to the theoretical and conceptual bases of the design of infant curricula, and the above discussion illustrates the results of that failure.

Organizational Problems

Most infant curricula have their items and activities ordered according to the sequences the behaviors are to be taught. Curricula that borrow infant test items for content order the items according to the average or median ages at which the standardization sample manifested the criterion behaviors. Whether intended or not, the sequence in which the items are arranged is the order the behaviors typically are taught. Moreover, it is assumed that any behavior in the sequence is the prerequisite for the following behavior.

Several major organizational problems exist when items are arranged according to the ages at which the behaviors ordinarily are manifested (see Dunst, 1981, for additional shortcomings). First, there is the problem of relationships among items. Psychometric infant tests are based on a conception of development in which "various actions were conceived to speak essentially for themselves; they were not selected to signify, even implicitly, progress in the level of organization (of development)" (Uzgiris & Hunt, 1975, p. 13). So, infant test curricular items represent discrete landmarks rather than a progression. Therefore, it would seem that curricula which borrow infant test items for their content facilitate the acquisition of isolated behaviors (psychometric infant test items have no inherent significance and derive meaning only with regard to a child's overall score on the test).

Second, because no inherent relationships between achievements on traditional infant tests are assumed, it may be misleading to assert that a progressive relationship exists between adjacent items in a curricula sequence. This may be true also for curricula items constructed from a Piagetian perspective. The fact that a series of landmarks in the genesis of a particular construct (e.g., object permanence) forms a logical, developmental sequence of behaviors (Uzgiris & Hunt, 1975) does not establish functional continuity between the successive levels of achievement (Brainerd, 1978; Dunst & Rheingrover, 1981; Flavell, 1971; Kagan, 1980). Consequently, assertions of precursory and causal relationships between items on infant curricula must be guarded until evidence has been gathered to support such assertions.

Content Validity

The majority of items and activities of most available infant curricula are designed primarily to enhance a child's knowledge of and behavioral competencies with inanimate objects (e.g., object permanence, fine-motor skills, perceptual abilities). This is intended, at least in part, to prevent, ameliorate, or circumvent developmental retardation. Yet, as Baumeister (1980) and Brooks and Baumeister (1977) pointed out, mental retardation is primarily a phenomenon involving deficits in social and adaptive functioning (i.e., knowledge of and behavioral competencies involving *animate* objects). This suggests that infant curricula should focus on social-adaptive competencies (prelinguistic communication skills, social-affective behaviors, etc.) as opposed to the child's mastery of competencies in-

volving nonsocial objects. This contention is supported by the results of a study by Charlesworth (1979) who found that 80 to 90 percent of all problem-solving episodes encountered by children on a daily basis were social in nature, and that few of the problems encountered were analogous to problem-solving tasks found on psychological tests. Given the preponderance of nonsocial activities on many infant curricula, both the content and ecological validity of these intervention strategies must be questioned.

Problem of "Test Training"

Dunst and Rheingrover (in press) reviewed the efficacy of infant intervention efforts and concluded that a portion of the progress made by early intervention could be due to test training effects. That is, it was found the tests used to measure progress were the same tests from which items were taken for curricula. Dunst and Rheingrover argued that in these instances, intervention consists of no more than repeated exposure to test items which sensitize infants to behaviors expected in response to specific tests and testers. This practice raises serious questions regarding the validity of inferences about the ability of behaviors "taught" under such circumstances to be generalized across settings, time, and people. More specifically, the external validity (Bracht & Glass, 1968; Cook & Campbell, 1979) of such an intervention practice is questionable due to any reactive or interactive effect of test training with any genuine treatment effect.

Restricted "Range of Reaction"

Since one major goal in the implementation of curricula procedures is the enhancement of developmental progress, one would like the content of infant curricula to include competencies that are affected by environmental factors. (As just discussed, one would like items that have content and ecological validity as well.) Hunt (1976, 1977) uses the term *range of reaction* to refer to the degree to which inter- and intra-group differences in the ages of acquisition of developmental attainments were affected by diverse environmental circumstances. The work of Hunt and his colleagues (see Hunt, 1976), using the Uzgiris and Hunt (1975) scales as criterion measures, has shown repeatedly that conditions of rearing and differing environmental interventions result in substantial variations in the ages at which developmental competencies are attained on these scales. Such variations are indicative of the range-of-reaction phenomenon.

There is reason to suspect that different developmental competencies have different ranges of reaction in terms of their responsiveness to intervention efforts. That is, some behaviors are more or less likely to be affected by intervention. In choosing items to be included on psychometric infant tests, one strives to include items that show minimal variability with regard to the ages at which different infants manifest the test behaviors. Otherwise, the items will not discriminate among infants differing in chronological age. So, for example, an item passed by 10 percent of all 2-month-old infants and 90 percent of all 4-month-old infants is a "good" item and retained in the item pool; an item passed by 10 percent of all 2-month-old infants but not passed by 90 percent of the test sample until the 10-month level is a "poor" item and discarded.

Items on infant tests which show minimal but discriminative variability suggest that such items have perhaps a restricted range of reaction (the test behaviors are less likely to be affected by efforts to foster a child's acquisition of the behaviors). Since many infant curricula include substantial numbers of infant test items as their content, the question must be raised whether or not attempts are being made to intervene to enhance the acquisition of genotypic dominant behaviors.

In any case, with regard to the range of reaction phenomenon, the issue of what behaviors constitute viable targets of intervention has not been addressed adequately as part of infant curricula construction. Without serious consideration, we may find ourselves expending efforts in developmental areas with strong genotypic bases.

Some Proposals

The field of infant curricula development has come a long way since Barsch (1967) exclaimed that an infant curriculum was a "concept for the future." To make further strides, I believe we need to attend seriously to important issues regarding the design and implementation of infant curricula. I conclude with several general proposals.

First, I believe we need to take a more eclectic approach to infant intervention. Instead of adopting one curriculum approach rather than another, we need to use strategies most appropriate and effective for facilitating acquisition of the behaviors chosen as targets. In fact, I suspect targets dictate the choice of a strategy rather than vice versa.

Second, I think we need to reconsider seriously the targets of intervention. We should not target a behavior merely because it is included in a curriculum. If I cannot think of a functional reason why I should teach a child a behavior, then I don't teach it.

Third, infant curricula need to be expanded to include functional, social-adaptive competencies. We need to emphasize more the acquisition of skills involving knowledge of animate objects, particularly behaviors that permit a child to initiate, sustain, and mold interactions between himself or herself and significant others.

Fourth, I think we need to reconsider the practice of intervening primarily to produce vertical progressions in development. Instead, we should elaborate and expand on a child's repertoire of behaviors. When teaching a child a particular behavior or skill, more emphasis needs to be on providing a variety of experiences that enhance the opportunity to use a newly learned behavior in different and functional ways. Failure to do so probably will result in facilitation of isolated, nonfunctional, and nonadaptive behaviors.

Fifth, I believe we need to discontinue acceptance of the tenet that development occurs only in a certain sequence. We should adopt the view that there are alternate ways to arrive at an end, and we can choose the most appropriate ways to teach targeted behaviors. The work of Fischer (1980) is noteworthy. Fischer contends there are many possible paths in development, and that each can lead to the same outcome. Thus, it may not be appropriate or necessary to make certain children conform to developmental sequences based on the study of nonhandicapped children.

Sixth, I believe we need to consider very seriously the issues raised in the *Pragmatic Considerations* section of this chapter. For the most part, infant curricula development has occurred without regard to concepts. The result has been a failure to attend to crucial considerations in the design and implementation of curricula activities.

Finally, I think we need to take seriously an ecological perspective of development and intervention. An ecological point-of-view provides the type of broad-based conceptual framework needed to meet adequately the needs of children as developing members of ecological units. An ecological perspective fits intervention strategies to the needs of children and their families rather than fitting children to structured curricula procedures. For the most part, infant curricula have been entirely child-focused. Intervention strategies developed from an ecological perspective are systems oriented and consider in the design of intervention procedures the child, family, setting, and other variables. This view should increase the probability of success of our intervention efforts.

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Chapter 2

Infant-Centered Curricula

by Nancy M. Johnson and Ken G. Jens

Though the problem of defining teaching and the importance of learning during infancy was cited nearly three and one-half centuries ago (Frazier, 1969), the formal delivery of educational services to infants is a relatively recent phenomenon. Thus, development of curricula for infants is not supported with the kind of experience that forms the foundation for curricula for preschool, primary, or secondary school aged children. Yet, a growing commitment to infant education is creating a great demand for infant curricula.

Some basic issues involved in developing curricula for handicapped and nonhandicapped infants need examination. Issues considered in this chapter relate to 1) defining the scope of infant curricula, particularly for handicapped infants, 2) determining curricula content, 3) selecting teaching strategies, 4) the function of assessment strategies used with curricula, and 5) developing guidelines to evaluate curricula.

Defining Scope

Educators disagree whether a curriculum is simply a list of learning objectives (Bellack & Kliebard, 1977) or whether it must include learning objectives and the means to reach them (Frazier, 1969). Further disagreement exists regarding parameters; some argue that the unique environment of individual children becomes, in fact, their curriculum (Olds, 1979).

When knowledge and skills emerge from a complex interplay of maturation and experience, it is particularly difficult to determine appropriate parameters of a curriculum. Questions arise: Should a curriculum focus primarily on development of those sensorimotor skills designated as the cognitive and linguistic precursors of school readiness? Or, should it cover all aspects of child development in the first two or three years? Should it concentrate only on "teachable" skills? Or, should it include those skills that are heavily dependent on neurological maturation? Should a curriculum differ from stimulation activities often described for normal children if it is designated as a curriculum for handicapped infants? Should it be based entirely on skills observed in normal infants? Or, should it promote special functional or adaptive skills? Should a curriculum be prepared to be used only by teachers and other professionals? Or, should it be prepared to be used by parents and other caregivers as well?

To learn what kinds of curriculum materials are being used in intervention programs serving handicapped infants in the United States, Jens, Johnson, Gallagher, and O'Donnell (1979) conducted a survey which showed little agreement as to what constitutes a curriculum. Materials called curricula ranged from one-page skills checklists to volumes of several hundred pages detailing objectives, materials, methods of instruction, and assessment procedures.

A review of materials most commonly cited in the survey and other recently released curricula (Bailey, Jens, & Johnson, in press) revealed that authors of curricula frequently are not specific about the children for whom materials are designed. In fact, many curricula presumed developed for use with moderately and severely handicapped youngsters show data (if any) regarding use only with mildly handicapped and at-risk populations. Most curricula labeled for use with young handicapped children contain primarily, or exclusively, items taken from developmental assessment tools designed for normal children. Apparently, the assumption is that those items are the most appropriate learning objectives for handicapped children. Usually, items are combined from several assessment instruments with the philosophy that providing more developmental items than are included in any one tool produces a more comprehensive curriculum (see Chapter 1 of this volume).

Based on the survey, the review of curricula, and experience in intervention with biologically impaired infants, the authors conclude the scope of a curriculum should be defined by the nature of the children it will serve. While mildly handicapped and at-risk infants may be served well by simple checklists and guides to infant stimulation, moderately, severely, and multihandicapped infants require much more comprehensive curriculum materials. The more handicapped the youngsters are, the smaller the steps have to be between learning objectives. Thus, a greater number of

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intervention items are necessary. Also, as the severity of handicapping conditions increases, there is greater likelihood that items taken solely from developmental tests will be inadequate intervention targets and there will be greater need for information about abnormal development and common medical problems in a curriculum.

Atypical children do not become "normal" as a result of therapy or education. Many will never be able to talk even if they understand language. For these youngsters, alternate communication systems must be considered early in life. Some will never see, others will not hear, still others will not be able to explore their environments through object manipulation or locomotion. For them, educators must devise alternate means to gain understanding of the world. A few children will have conditions which may be exacerbated by attempts to teach a "normal" behavior at the wrong time or in an inappropriate manner.

Finally, it is apparent that the scope of a curriculum should be determined partly by characteristics of intended users. Most curricula for handicapped infants do not refer specifically to an intended user. Yet, this is a critical element since services can be delivered by an array of people including parents, teachers, or experienced therapists. It is reasonable to assume that a curriculum can be less comprehensive when used by trained professionals or where professionals are available for consultation and help in modifying curriculum items to meet an individual child's needs. More comprehensive curricula are necessary when used by a parent or other relatively untrained caregiver with minimal professional assistance.

Determining Content

The primary consideration in the selection of curricula is content—that is, the learning targets it presents. Defining appropriate content is far more complex for an infant curriculum than for an academic curriculum or an independent living curriculum for older handicapped persons. One reason is that physical and neurological maturation are more rapid, and thus more critical, during infancy than during later developmental periods. So, infant curricula are designed almost universally to foster development. This is crucial since any particular developmental perspective may affect significantly the elements included in curricula and the expected teaching method.

These developmental perspectives range from humanistic theory with its concern for the uniqueness of an individual and environmental forces which impede growth, to psychodynamic and psychosocial theories where the key concept is the development of identity of the infant in relation to the parents, family, and wider social environment.

The cognitive aspect of development has been emphasized by Gesell (1925) and Piaget (1952). Gesell emphasized maturation and described development primarily as a function of genetically prescribed growth. He said little about plasticity as a construct and thus spoke little about the importance of guided learning experiences. Gesell was concerned primarily with "when" questions of development. This perspective underlies many developmental tests such as the Cattell Infant Intelligence Scale (Cattell, 1960) and the Bayley Infant Scales of Development (Bayley, 1968). Many curricula have been developed for young handicapped children using primarily the normal developmental milestones provided by such developmental tests. They have been useful, but they present problems because the use of developmental sequences for teaching may not provide a logical teaching sequence. That is, even when skills are divided into several domains (motor, language, cognitive, etc.), the items within each domain are likely to be sequenced on the basis of the mean age at which normal children acquire the skill rather than on the skills provided by mastery of the previous item.

In recent years, Piaget is probably the theorist who has had greatest impact on educational programming for young children. His stage theory of development has been the basis for ordinal assessment batteries and criterion-referenced curriculum materials. Within Piagetian-based programs, emphasis is on biological sequences of development that apply to all children. Infancy is seen primarily as a period of sensorimotor development, and dimensions of development most frequently are object permanence, means-end relationships, operational causality, imitation, spatial awareness, and object function. Curricula based on a Piagetian model basically are cognitive and language oriented and generally do not include activities aimed directly at improving motor, social, or self-help skills except as they relate to cognitive activities.

Recently, the Functional Curriculum Sequencing Model, (Guess, Horner, Utley, Holvoet, Maxon, Tucker, and Warren, 1978), has influenced development of curricula for severely handicapped young children. Irrespective of the theory primary to the selection of content of a curriculum, Guess et al suggested that "functionality" is of primary importance when selecting instructional targets for moderately and severely handicapped children and that one should teach skills which have a reasonable probability of improving as rapidly as possible a child's interaction with the environment. Use of this model calls for development of functional and age-appropriate skills as instructional targets to the greatest extent possible regardless of the child's developmental level. After identification of es-

sential behaviors, the specifics to be taught are determined by working backwards to ascertain prerequisite skills. This model has proven useful with older handicapped children and adults but may cause problems with very young handicapped children. It is more difficult to adapt developmental expectations and teaching/learning strategies for a 2- or 3-year-old functioning at a 6-month level than for an older person capable of reaching, grasping, walking, and perhaps talking.

Opinions regarding the theoretical bases for the selection of curricular content will conflict as long as more than one person is working on the problem. As Holvoet et al (1980) suggest, a reasonable approach may be to assume the normal developmental and the Piagetian models have much to offer, and both should be considered in developing a meaningful instructional program for young handicapped children.

Bailey, Jens, and Johnson (in press) describe other content issues developers must address:

- identifying the domains or skill areas to be included;
- determining a logical and useful number of instructional targets within each domain;
- determining the relative emphasis of the curriculum in different age periods (e.g., birth to 12 months, 12 to 24 months, 24 to 36 months);
- providing modifications in content for children with sensory or motor handicaps which preclude normal interactions with curricular materials.

Teaching/Learning Strategies

Many infant curricula consist primarily of lists of skills to be learned, leaving the teaching strategies to the discretion of the interventionist. However, since the experience and education of teachers of young handicapped children are so diverse, it seems more important that teaching strategies be specified for infant curricula than for curricula for older children who will be taught by certified teachers.

Bailey and Wolery (in press) suggest there are three basic approaches to determine methods of instruction for young children: experiential, Piagetian, and behavioral; but they note that the Piagetian method is actually a special case of the experiential.

The experiential method defines a group of experiences which will stimulate the child to master appropriate developmental tasks. The basic assumption in this approach is that since children learn by experience, the more learning experiences provided, the more rapidly the children will learn. Experiential curricula vary in the extent to which they specify learning objectives. Those developed for at-risk populations simply may list play activities for children functioning in the birth to 3-month range, 3-to-6 month range, etc. (e.g., *Infant Learningames*, Sparling and Lewis, 1980). Curricula for more significantly impaired youngsters tend to supply lists of developmental skills and related activities to stimulate mastery of each skill (e.g., *Hawaii Early Learning Profile Activity Guide*, Furuno et al, 1979).

Curricula based specifically on Piagetian theory, regardless of degree of handicap of the children, suggest activities to help a child master skills represented by items on ordinal scales of development. Or, they may suggest activities aimed at moving a child from one stage of cognitive development to the next. The teacher's role in the experiential model is to provide learning experiences for the child. In keeping with a Piagetian viewpoint, the child is the initiator of learning; the teacher is the facilitator.

Within the behavioral model, the teacher's role is more active and directive. The teacher's task is to specify skills in behavioral terms, to analyze components of those skills, and to institute a teaching strategy. Within curricula aligned with this model, the tasks to be learned are described clearly as observable behaviors, and provisions are made for directly assessing the child's mastery of the skills. Specific teaching techniques are suggested generally in the behavioral model, including modeling, prompting, guidance, systematic reinforcement, and correction procedures.

While some argue that models of development or learning should not be mixed, it is apparent the practical distinctions between the experiential and behavioral models is not always clear in infant curricula. Bailey and Wolery (in press) note that experiential (e.g., *Hawaii Early Learning Profile Activity Guide*) and behavioral (*Programmed Environments Curriculum*) curricula do not always call for different teaching techniques for a specific skill. Furthermore, some curricula which appear to be experiential or Piagetian specify behavior strategies (e.g., *Portage Guide to Early Education*, and *Carolina Curriculum for Handicapped Infants*).

Bailey et al (in press) point out that the extent to which a curriculum adopts an experiential or behavioral model also may be determined by the characteristics of the target population. The more severe a handicap, the less likely the child is to initiate environmental interactions and show progress with a purely experiential approach; thus, the more critical it becomes to specify and monitor behavioral teaching strategies. Therefore, teaching strategies selected for a curriculum designed for at-risk youngsters may not be effective for those who are severely and multihandicapped. The critical issues for the curriculum developer or user are that basic teaching strategies be identified and the theoretical or practical basis for their adoption be specified.

Assessment Strategies

Though assessment procedures may be well defined in a particular curriculum, the implementation of the curriculum depends heavily on adequate assessment. Through such assessment one specifies existing skills, identifies appropriate learning objectives, determines if learning is taking place, and evaluates the effectiveness of intervention.

Most infant curricula provide a checklist or evaluation tool to determine a child's existing skills and set learning objectives. In fact, many curricula consist primarily of a criterion-referenced assessment tool, supposedly sequenced according to task difficulty. The teacher identifies existing skills and selects the next most difficult skills as targets for learning (e.g., *Early-LAP*). However, the effectiveness of this procedure depends on the actual ordinality of items included in the tool. With the exception of curricula based on Piagetian ordinal scales, little evidence supports the ordinality of items in infant curricula. As noted earlier in this chapter, most curricula sequence items according to the mean ages at which normal children accomplish the skills presented. This procedure probably does not represent the order a handicapped child learns the skills (Johnson, in press). Most infant curricula do not emphasize this issue, essentially leaving it to the teacher to develop a strategy to deal with those children whose development does not follow the order defined by the curricula. Only a few relatively new curricula attempt to deal with this problem. For example, the *Assessment and Application* volume of *Developmental Programming for Infants and Young Children* (Rogers and D'Eugenio, 1977) describes how to select accomplishable objectives for a child, taking into consideration performance on the assessment tool. It also includes instructions for altering activities for specific handicaps.

Another approach divides the skills normally included in developmental curricula into more than the traditional six domains or sequences—gross motor, fine motor, language, social, cognitive, and self-help; each domain represents an ordinal sequence. The *Carolina Curriculum for Handicapped Infants and Toddlers* (Johnson, Jens, Attermeier, 1979) includes 24 sequences which can be grouped into five domains. The authors report field-test data indicate some sequences are more ordinal than others. This suggests it may be impossible to develop sequences which are ordinal for all handicapped youngsters as long as many items are included for a short developmental period.

Assessment to determine if learning is taking place as the curriculum is implemented is influenced more by experiential or behavioral teaching strategies than by any other factor. In the experiential model, degree of skill attainment generally is determined by periodic assessment on the assessment tool which determined curriculum entry and goal identification. The advantage of this procedure is that it is relatively unobtrusive. One interacts with the child, provides experiences, and assesses. The disadvantages are if the skill was learned, it may not be possible to identify which stimulation activities were most effective in promoting skill mastery; and if the skill was not learned, it is difficult to identify the source of failure. These concerns are magnified when one works with severely handicapped children who are less likely to abstract a principle from a variety of learning experiences and when the time required for skill mastery is critical.

The behavioral model includes ongoing assessment during the teaching/learning process. This does not mean necessarily that the child's response to every learning trial is reported, since learning experiences often are woven into daily care activities. Rather, a systematic procedure is developed for data collection (at specific times and intervals). This system allows easier identification of periods when learning is at a standstill and when some procedural changes must be made. Teachers also can identify which experiences are most effective in promoting mastery of targeted objectives. Disadvantages are that data collection is more obtrusive, and unless generalization procedures are included, there is a danger of "teaching to the test" (i.e., teaching skills which may not be integrated to adaptive activities).

As these two teaching strategies overlap in practice, differences in assessment procedures may become less apparent. When periodic assessments become more frequent in the experiential model, assessment becomes more obtrusive and daily decisions improve. Similarly, behavioral models become more effective as they identify the least obtrusive methods of collecting data and provide for generalization of learning. The critical issue for the curriculum developer or user is to identify ongoing assessment procedures which will promote adequate decision making.

Assessment to determine the effectiveness of intervention is rarely discussed in any detail in a curriculum package. However, since programs are held accountable for their intervention approaches, it is important that strategies for determining effectiveness be devised. Johnson (in press) and Bailey, Jens, Johnson, and Ogle (1981) discuss in detail the problems inherent in assessing program or curriculum effectiveness. Usual strategies are: 1) to demonstrate that intervention has increased the rate of development, either by independent assessment with a norm-referenced instrument or by assigning developmental ages to items on criterion-referenced instruments; 2) to compare progress in an

intervention and non-intervention group or in an intervention-A and an intervention-B group; or 3) to use accumulated data from a series of single-subject studies. Uneven developmental rates in all children, the unique characteristics of handicapped youngsters, the ethical problems in selecting control groups, and lack of knowledge about development in significantly handicapped youngsters cause problems for each of these strategies. It is the responsibility of curricula developers and users to realize these shortcomings as they devise strategies. A curriculum package is not complete without suggested strategies and a discussion of limitations.

Developing Guidelines for Evaluating Curricula

While there is no set of *a priori* standards to use to evaluate curriculum development—that is, to determine when materials acquire the status of curricula or to choose the best curricula for given handicapped youngsters—logical guidelines are available.

Definitions of curricula are extremely diverse and provide varying amounts of structure for curricula developers. Some (Bellack and Kleibard, 1977) require only that a curriculum describe intended results of instructions. Others (Frazier, 1969) require a curriculum provide indication of what is to be taught and the learning processes. Bailey et al (in press) point out that while the delineation of content is most important in curriculum development, curricula for handicapped infants appear to be incomplete if they do not provide information regarding teaching/learning strategies and means of assessing development—the outcome of intervention efforts.

Different people can perceive differently the value and importance of various criteria. And many useful curricula have been developed without meeting any of the suggested criteria. Despite these problems, it seems reasonable to suggest the use of standards might improve our curricula development efforts. What, then, are some straightforward and logical criteria to use to evaluate, compare, and make choices among curricula designed for use with handicapped infants?

First, the authors should provide (perhaps in the form of introductory chapters or a user's manual) general information that makes clear the theoretical framework and educational approach of the curriculum. General outcome objectives should be stated with the expected entry skills of the children.

Second, a curriculum should provide guidelines for selecting teaching items in a logical as well as a developmental sequence. This can be done in some curricula by providing relatively ordinal sequences. Others will need special instructions for grouping items. If curricula are built on normal developmental milestones, especially as delineated in assessment tools (e.g., *Bayley Scales of Mental Development)*, the need to reorder items into logically related subsequences becomes most important.

Third, authors should provide a curriculum-referenced assessment process to facilitate placement within the curriculum and to provide guidelines for selecting intervention objectives from the curriculum.

Fourth, a curriculum for handicapped young children should include:

- suggested materials for teaching youngsters with specific sensory or motor impairments;
- suggested methods and teaching strategies;
- criterion behaviors for all teaching targets and conditions for assessing them;
- alternative teaching strategies to use with infants who are particularly difficult to teach;
- notes and cautions regarding the management of health and physical problems likely to interact with learning and behavior.

Fifth, curricula should provide a means for ongoing data collection to facilitate appropriate decisions on selecting new learning objectives or modifying current teaching strategies. Obviously, this should be closely related to the assessment process used to select initial intervention objectives.

Sixth, a curriculum should include information on its use and effectiveness. The curriculum should be field-tested on a reasonable sample of the kinds of youngsters for whom the curriculum is intended. Information from field-testing should be used to revise and improve the curriculum (rather than merely be reported). Authors should describe thoroughly the process of developing, testing, and revising the curriculum.

Seventh, authors should provide data regarding usability—that is, how useful materials are perceived to be by potential users reviewing them and by actual users after trying them. Even the best materials will not be used optimally if they are not perceived favorably by potential users, and the most appealing materials will be discarded if found to be unwieldy or otherwise objectionable after use.

Developing curricula for handicapped infants is a complex and difficult process. The ultimate success of each endeavor to develop such materials will be determined by the way potential users accept curricula and the effect they have on the development of handicapped infants.

Defining the scope, content, teaching strategies, assessment procedures, and evaluation criteria may help the development of sophisticated curricula and the critical evaluation of current products.

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Chapter 3

Focus on the Family

by Jennie Swanson

Several researchers have documented the importance of involving parents in early education programs (Bronfenbrenner, 1975; Goodson and Hess, 1975; Karnes and Zehrbach, 1975; Weikart, Deloria, Lawsen, and Wiegerink, 1970). The *way* parents may be involved is not as well documented.

In the 1950s parents typically were involved in infant programs as recipients of information. Parents would go to an "expert" for diagnosis and guidance. Parents often were impressed by the jargon used by professionals and frequently did not understand their infant's condition, nor did they implement a home program to complement the program the professional directed. Parents seldom attended staffings or had input into their child's programs—if, indeed, they could find an infant program.

The content or curriculum of these infant programs often was limited to motor abilities which were usually age related. The focus clearly was on the child.

Today, a change in focus is evident. There is an awareness that the infant has an impact on the family, the family has an impact on the infant, and the environment has an impact on the total family system. This awareness has resulted in a new direction for infant programs—a focus on the family.

The purpose of this paper is to describe four ways programs for infants with special needs focus on families:

- teaching the parent to teach,
- promoting the parents' observational skills and knowledge of child development,
- focusing on parent-child interaction,
- supporting and enhancing the family system.

Teaching the Parent To Teach

As parents began observing and participating more in their infant's program, it became obvious that consistency in programming was important and that maximum gains were possible when educational or therapeutic programs were implemented in the home.

Foreman and Atkeson (1977) reported four specific ways parents serve as therapists:

- temporal—the maintenance of treatment effects following termination of treatment,
- setting—the occurrence of treatment effects in situations other than the therapeutic one,
- behavioral—changes in behaviors not targeted for treatment,
- siblings—improvement in the behavior problems of the targeted child's siblings.

These four ways imply that the parents' role was to supplement the primary therapeutic program.

Recently, the focus has been on the parents as the primary teacher with professionals serving as resources to parents. This places the parents in control of their infant's program. As a result, the parents become the target audience for educational materials and experiences.

At the Child Development and Mental Retardation Center at the University of Washington (Hayden, 1976), parents receive center-based training to help their child develop self-help, motor, communication, cognitive, and social skills in the home. The training depends on the type of program and on special needs of the parents or family. There is no "parent training package," and the emphasis is on individual instruction for every child. However, instruction is guided by basic principles undergirding the parent training program. Most of the intervention programs are short term, except for the Down's syndrome program.

The focus on content of the program at the University of Washington is to bring the child's development to as close to a normal level as is possible, with an understanding of the wide range of normal development. To do this, parents learn to keep data on their child's performance and to apply at home the procedures used in school.

In the mother/child home program directed by Levenstein and Sunley (1968), the emphasis was on verbal interaction within the family. Initially, the goals were to increase conversation and communication, but the long-term goal was to help the mother become more effective in guiding or teaching her child. In the home, a social worker would interact primarily with the child during early sessions and would gradually en-

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courage the mother to participate as the principal agent to help the child acquire language and other abilities and skills. Family counseling supplemented the mother/child program.

At the DARCEE infant program (Gray, 1976), conducted at the Demonstration and Research Center for Early Education at George Peabody College, the overall goal was to enable parents to become more effective educational change agents. Parents were offered opportunities to take more initiative. And, they were encouraged to develop better coping skills.

Three principles were employed in the DARCEE program:

- focus was on the parent rather than the child,
- all family members were included in the lessons during the home visit,
- materials used were readily available in the home.

Other than the use of positive reinforcement as a guideline, the content of the curriculum was individualized. The parents construct play materials, provide play experiences, and observe and record the infant's progress.

The Ypsilanti Project (Lambie et al, 1974) was designed to help parents realize their individual potential as teachers of their infants. Home visitors introduced parents to an organized set of infant activities and a curriculum that uses constructs of Piaget's sensorimotor period. The parent is encouraged to observe and interpret the child's functioning and to take initiative and assume responsibility as the child's teacher. This approach aims to improve the way mothers think of themselves as capable teachers.

Capable teachers must have a knowledge of child development and the ability to be careful observers of a child's functioning. If parents are to be informed fully about their child's development, they also must have this knowledge.

Promoting Observational Skills and Knowledge

To provide appropriate and effective experiences for their infants, parents must be careful observers of the infant's behavioral (alertness, sleepiness, etc.) state, cues, reactions, abilities, interests, and temperament.

Though infants often are observed to be alike in many ways, variations in timing, content, and patterns of development make it clear that each child is unique. And, there is no one correct way to parent. This presents a dilemma in curriculum building for parents who have infants in early intervention programs.

One approach which considers similarities and differences in infants is to provide the parent experiences to learn about "normal" child development and then to learn to be astute observers of their own infant's functioning. The purpose of this approach is not to label or diagnose but to help parents understand how their infant is similar to or different from other infants. Through careful observation of the child, parents may be able to provide more appropriate experiences and facilitate more mutually satisfying interactions between themselves and their infant.

To be effective, these programs for parents must consider not only infant characteristics but parent attitudes, abilities, concerns, and interests. These considerations must also be appropriate to the cultural and social milieu of the family.

Following are examples of approaches that promote parental observational skills and knowledge of child development. These three approaches focus on the parent's awareness of the infant's competencies and characteristics as a basis for improving interaction between parent and infant:

- The Assessment of Term Characteristics,
- Partners in Child Development,
- The Swanson Infant Follow-up.

The three approaches were designed to emphasize parental and infant competencies, assist in adjustment of the new family member, expand options for caretaking, and facilitate mutually satisfying interactions. These actions are accomplished best in an atmosphere that respects the family and does not usurp their role as caretakers of their infant. The intent of the three approaches is not for the parent to be a teacher but for the parent to improve parenting skills and knowledge.

Assessment of Term Characteristics (Swanson et al, 1981) is an instrument used to describe the characteristics of an infant at term (the date of birth or the expected due date). The physical and neurodevelopmental characteristics and the parent/infant transaction are a part of the assessment. The parents are active participants in this early description of their infant's competencies. Grandparents, siblings, and others may observe or participate. The focus is on the infant's strengths. Characteristics which might be suspect for abnormal or delayed development are described simply as "suspect signs" which will be checked at a later visit. Suggestions to the parents are adapted to the infant's unique clustering of "suspect signs."

Parents report that the Assessment of Term Characteristics is informative and that it increases positive regard for their infant. It also provides an opportunity for the parents to ask questions about their concerns (birthmarks, uneven smile, tremors, feeding problems, floppiness, etc.).

At the conclusion of the assessment, which usually

takes about 45 minutes, the parents have had a "top to toe" description of the infant's physical characteristics and a neurodevelopmental description beginning with brain stem reactions and continuing through midbrain and cortical functions. Temperamental characteristics have been discussed and the frequency of parent/infant transactions recorded. Participants then derive recommendations for experiences from the infant's characteristics, temperament, and the parental attitudes, abilities, concerns, interests, and cultural and social milieu.

The purpose of this assessment is to provide an early competency framework for the parents to view their infant and to establish careful observation as an important parental function.

Partners in Child Development (Kise and Swanson, 1978) is a curriculum for parents to use with infants from birth to age five years. As the infant grows and develops, new competencies emerge and may be recorded in an ongoing assessment and activity guide for the parents. Parents are encouraged to chart their infant's functioning on a developmental profile. For each competency, activities are suggested which correspond to what their infant can do. Parents also are encouraged to create new experiences based on their observations.

When parents have completed their child's developmental profile, they have a record of their child's unique path of growth and development. There has been no need to label or score, but there has been a need to provide a parent with a developmental frame of reference adaptable to their child's unique functioning and their home conditions.

Parents who can read and are self-motivated to continue observations and recording find *Partners in Child Development* a useful tool.

The Swanson Infant Follow-up (Swanson, 1981) is an ongoing program for infants from birth to age three years which relies on parental reporting of child growth and development and infant/toddler care as a basis for interactions between the parent and the professional. The parent is accepted as most knowledgeable about the infant. The professional's function is to serve as an information resource, to monitor progress, to identify suspect signs, and to interact with parents on issues of interest and concern.

This parent report is recorded at 1, 3, 7, 12, 18, 24, and 30 months of age. Most of these periods have been found to have neurologic prognostic relevance (Saint-Anne D'Argassies, 1977). At each of these periods, the rate and pattern of development is noted. These patterns consist of general abilities or characteristics common to different cultures. The patterns also include items of interest to parents (feeding, sleeping, etc.) and signs which might indicate abnormal functioning.

The intent of this follow-up system is to determine the child's neurodevelopmental functioning, the parent's observations and concerns, and the family's adaptation to the infant as a basis for interaction, problem-solving, and sharing.

The Swanson Infant Follow-up may be used as a data collection system, a care management system, or a child progress and program evaluation system, and a vehicle for communication between parent and professional.

Parent/Child Interaction

The parent usually is the most consistent person in the infant's life—present during most of the day and night, from season to season, and from year to year. During a lifetime, a child will have many teachers but few parents.

The quality of the ongoing relationship between parent and child may be affected by the responsiveness of the parent to the infant's signals and the parent's ability to respond appropriately and sensitively (Fraiberg, 1971). Responsive maternal behaviors have been found to influence an infant's cognitive development. In social relations, the child's behavior influenced the mother (Clarke-Stewart, 1973). According to Als, Tronick, and Brazelton (1980), there appears to be a mutual communication system that meets the biological and psychological needs of the parents and infants. Both the parent and the infant influence subsequent responses from the other.

The mutual communication system may be challenged by an infant with special needs. Parents who have an infant who does not give eye contact, who does not grasp when the palm is touched, and who does not actively initiate actions, may feel very inadequate. Their infant is not initiating the "care-eliciting" behaviors to which parents readily respond. Korner (1971) found that infants initiate approximately four out of five of the observed interactions. Thus, initiations by the infant and the match with the parent's responses appear to be powerful determinants of parental responses. Congenital child characteristics (including impaired sensori-motor capabilities), responsiveness to parents, and activity levels elicit and reinforce different levels and intensities of parent behaviors (Bell & Harper, 1977).

Bromwich (1981) stated:

In families with young children with disabilities or infants born at risk for disabilities, certain obstacles inhibit mutual satisfaction and pleasure in the parent/infant relationship. Infants are often more difficult to care for; e.g., they may cry more of the time, be difficult to soothe, and have feeding problems. They may

be less responsive and give unclear cues. (p. 22)

To encourage and facilitate pleasurable interactions, Bromwich (1980) has described a parent/infant education approach which includes:

- increased parent awareness of the infant's sensory tolerance and temperamental organization,
- increased enjoyment of the infant and responsiveness to his or her communications,
- increased ability to anticipate developmental changes in the infant's behavior.

To focus on the positive parenting actions, Bromwich (1980) suggests the infant development specialist first observe the parent/child interaction and then support the positive actions of the parent. The instrument which Bromwich developed to structure positive parent/child observations by professionals is the *Parent Behavior Progression*.

The intent of the *Parent Behavior Progression* is to encourage positive interactions between the parent and child and to increase the parents' self-confidence. This approach is described in *Working with Parents and Infants: An Interactional Approach*. (Bromwich, 1980).

The birth of a child is the beginning of the process of socialization for a primary lifetime relationship between parents and child. It is also the foundation for the infant's emergence as a social human being. The importance of the parent/infant interaction begins at this time.

The parent/child interaction is an important part of the infant's early experience. However, the infant also is part of a larger system—the family system.

Supporting and Enhancing the Family System

When a baby is born, a family system is changed. The family must adapt its structure and functions and incorporate its newest member. When the infant has special needs, the family experiences a period of disorganization. Some families are more resilient than others and move rapidly from hopelessness and helplessness to realistic problem-solving. These families may have had another family member who had special needs or they may have had fewer expectations of the infant. Perhaps they have many social supports. At any rate, reaction to having an infant with special needs varies from family to family.

For most families finding out that an infant has special needs creates a crisis. There often is a feeling of lack of control and a lack of predictability. During this time, the family may need nurturing. This nurturing may be simply someone to talk to—someone to tell the incidents surrounding their infant's problems, their guilt, their fears, their questions, their anger, and in time perhaps, their intimate concerns and feelings.

Many parents think they are "going crazy," and most all parents ask, "Why me?" They are often relieved by talking to another parent of a child with special needs. They find commonalities and emotional support. Their fears and feelings are shared. Self-help groups or parent-to-parent contacts may be a valuable resource for some parents. Other types of social support networks (neighborhood friends, community agencies, extended family) often help to diffuse or disperse the effects of stress. However, these relationships may substitute for communication within a family. Strong bonds may be formed particularly between mothers who share common concerns. And when this relationship substitutes family communication, the mother and infant may become isolated from the family. Workshops in family communication may help alleviate this problem.

Since family needs and strengths are diverse, it may help to identify some principles that support families and encourage their growth. These principles might be included in a curriculum for parents:

- Make contact as early as possible.
- Be available emotionally and physically.
- Listen caringly to "their story."
- React and interact as a person who is a resource and not as a therapist, a judge, a teacher, or an expert. This requires personal adaptation to new information and observations on a minute-to-minute basis. There is not one strategy or approach; each contact has its unique context.
- Respect the rights of the parent *to* parent. Usurping the responsibilities and decision-making of parents lowers self-esteem.
- Be comfortable with yourself as a professional so you can help others rather than prove your own competencies.
- Respect families' confidentiality and privacy.
- Acknowledge and support the family system with its component parts which make up the dynamic whole. Invite participation by significant others (siblings, friends, etc.).
- Elicit family system strengths, concerns, and needs as a basis for new directions.
- Inform the family of available resources.
- Elicit problem-solving and action steps from family members and suggest a follow-up plan.
- Help expand family competencies.
- Provide the availability and structure for ongoing contact, progress, and crisis management.
- Facilitate interaction with other families.
- Elicit relaxation and pleasurable experiences for family diversion.

- Provide information and alternatives about the risk condition, and elicit a frequent evaluation of services.
- Share findings and observations caringly and honestly.
- Share good as well as bad times.
- Promote family independence from your services. The purpose of attachment is successful detachment, with support as needed.
- Respect the privilege of participating in a family system. Whether entry was gained by mandate, need, or invitation, we are still a guest in the private and precious world of the family.

These principles were designed to help in three dimensions within the family: cohesion, adaptability, and communication. These three dimensions have emerged from six social science fields and have been described by Olson, Sprenkle, and Russell (1979). It is recommended that the family be "in control" as these dimensions are enhanced and that the professional serve as a resource to the family. Serving families from a resource base can be limiting or facilitating. The difference usually is one of attitude.

A positive outlook is beginning to emerge that shifts attention from family dysfunction to positive family coping and changes focus from grief and pity to sharing and problem-solving. Families are challenged to be more creative and adaptive. Parents are not pitied. They are admired for meeting and responding positively to a challenge and a family system crisis.

Summary

A new trend in infant programs is a recognition of the primary and significant role of the family. Programs that focus on the family:

- teach the parent to teach,
- promote the parents' observational skills and knowledge of child development,
- focus on parent/child interaction,
- support and enhance the family system.

The content of curricula for infant programs reflects the importance of family involvement. Infant assessments are functional and describe strengths and areas for improvement instead of diagnostic categories. The person most knowledgeable about the infant, the parent, is being recognized as the primary source of assessment information. Finally, and perhaps most important, attitude is changing. Negative or pathologic approaches are yielding to competency or strength enhancement—from a focus on the child to a focus on the family, from helplessness to problem-solving, from suffering in silence to sharing, from being pitied to being challenged and respected.

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Chapter 4

Contingency Intervention

by Richard P. Brinker
and Michael Lewis

Major innovations in concepts and methods in the study of child development have yet to have their impact on the practice of early intervention for handicapped infants. Two of the major conceptual innovations are:

- The infant is significantly more competent than had been believed (Stone, Smith, & Murphy, 1973).
- The infant is an active learner rather than a passive recipient of information (Piaget, 1952).

These notions lead to the conclusion that our interventions must be based on careful descriptions of the infant's existing competencies and activities for gathering information (Brinker & Chatelanat, in preparation). Often, our attempts to describe the infant's competencies are focused narrowly on specific behavioral milestones and do not include descriptions of the most common predictable behaviors. Thus, rather than conceptualizing the infant's freely emitted behavior in developmental terms, we often restrict our assessment to a narrow sample of behavior which can be compared to some standard (Brinker & Chatelanat, in press).

Developmental theory leads to the position that the rules by which actions and entities are organized in infancy are more useful keys to development than the specific actions and entities observed. Thus, in early infant learning the general cognitive aspects have a much greater developmental impact on the child than the specific movements learned. Such cognitive aspects would include the expectation that simple movements cause external consequences (Lewis & Goldberg, 1969). This "contingency awareness" (Watson, 1967) has a motivational component which leads the infant to continue to engage the environment and thus to differentiate between events he or she can or cannot control.

Alternative outcomes could result from long periods early in life with few opportunities to control events. Seligman (1975) has described this "learned helplessness" (a generalized expectation that one's own behavior is irrelevant to the environment). When control of the environment has not been experienced, some infants never realize they can control things and, hence, never try.

Handicapped infants clearly are at risk for learned helplessness. Their own motor deficiencies at birth reduce the overall probability of behavior-consequence contingencies. Moreover, parents of handicapped infants often have lower expectations of their infant's competence. This can lead to reduction in responsiveness to the infant's behavior and a vicious spiral in which the infant becomes increasingly helpless and the parent's low expectations become reinforced (Brooks-Gunn & Lewis, 1981).

Learning about the world and feeling competent in it as a result of successful interaction are products of early pairings of actions and outcomes. While they are the result of specific events, these behaviors become independent of the specific content of the interaction. The development of this generalized expectation that the environment can be controlled is the groundwork for all of the infant's later learning (Lewis & Goldberg, 1969; Lewis, 1976). So, one of the first and primary tasks confronting an infant is to learn how to engage and interact with the environment.

If an infant's behaviors are responded to consistently, quickly, and reliably (same responses), the infant will learn his or her behavior has an effect on the environment. This learning has a cognitive element since the infant learns to signal, a motivational component which may be termed competence (White,

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1959), and an element of emotional well-being possibly similar to what Erikson (1950) meant by trust.

The goals of any curriculum based on the generalized expectancy model are to develop:

- *Channels of communication* which normally develop between a child and the environment, or alternative channels if a handicap inhibits the usual channels;
- *Motivation* to explore and master the environment, a motivation which Provence and Lipton (1962) have shown lacking in institutionalized infants;
- *Feelings of self-worth or trust* (Erikson, 1950). These outcomes have implications for social (e.g., mother-infant) and non-social, (object) relationships (see Lewis, 1977). Motor dysfunctions of handicapped infants may prevent their experience of contingent action-outcome pairings.

The Contingency Intervention Curriculum

The Contingency Intervention Curriculum (Brinker & Lewis, 1981a, b) was designed to provide handicapped infants with learning situations that foster an awareness of control over the environment. For a curriculum to capitalize on competencies the infant already has and the fact that an infant is an active learner rather than a passive recipient of information, an intervention system must be highly flexible and capable of responding to active learners.

The steps in the curriculum cover the developmental range from primary circular reactions to simple means-ends behavior (Piaget, 1952). The concepts in this developmental hierarchy might be stated from the infant's point of view:

- "I can make things happen, but I don't know how I did it" (Primary Circular Reaction).
- "I can do this response to make this event happen" (Secondary Circular Reaction).
- "This response can make a variety of different things happen" (Elaboration of Secondary Circular Reactions).
- "Other responses can make a variety of things happen" (Elaboration of Secondary Circular Reactions).
- "These responses are tools for finding out what will happen" (Coordination of Secondary Circular Reactions and their applications to new situations).
- "Different combinations of responses lead to different kinds of information."

Normally, this developmental hierarchy is completed in the first year of life. However, some severely handicapped children have not exhibited these sensorimotor skills after age three or four years.

The Subjects

During the past year, two groups of handicapped children have been involved in the Contingency Intervention Project. The first sample (Brinker & Lewis, 1981a) participated in the project February through November 1980, and consisted of four Down's syndrome and one severely handicapped infant with Hirsch-Sprung disease. The second group (Brinker & Lewis, 1981b), November 1980 to June 1981, consisted of four profoundly retarded multiply handicapped children. Table 1 presents descriptive information for the nine children.

Infants were selected for participation in the Contingency Intervention Project after being visited in their homes and at the weekly intervention program at their respective infant centers. On both occasions, it was ascertained that the infants did not show an interest in objects either by looking at or manipulating them. None of the infants initially showed a consistent visually directed reach for objects.

The Method

Skills to be taught to an infant were not specified before entrance to the program. Rather, each infant was observed to determine those movements which he or she could make. Then, these freely emitted behaviors were linked to an environmental consequence.

Level I of the curriculum for some infants involved learning to kick a panel, raise the head in midline, vocalize, or pull a string attached to the wrist to produce an auditory, visual, or tactile consequence. After each child learned one response at a steady rate of at least 25 percent above baseline level, they were taught a second response to the same criteria. During the first level of training, only one of these responses actually produced a consequence. Hence, the procedure is a multiple baseline in which data is collected on two kinds of responses (arm pulls and leg kicks), only one of which produced a consequence.

Responses were monitored either by electrical switches (e.g., foot panel, arm pull lever) or by an observer coding behavior (smiles, cries, vocalizes [non-distress], looks at consequence, raises head, general arousal and distraction) on a six channel button box.

Table 1

Contingency Intervention Project Subject Roster

Child's Name	Medical Condition	Age at Initial Contact	Mental Age
Rosa	Down's syndrome	6 months	------
Jennifer	Down's syndrome	3.5 months	2 months
Troy	Developmental delay w/spasticity equilibrium disorder & Hirsch-Sprung Disease	12.5 months	5 months
Hugh	Down's syndrome	6.5 months	------
Juliet	Down's syndrome	4 months	2.5 months
Sian	Postnatal CA resulting in SQ w/ SZ and cortical blindness*	40 months	2 months
Tracy	SQ with microcephaly	52 months	2 months
Sally	Congenital Cytomeglio Virus w/ SZ and SH	29 months	2 months
Mary	Thalamic Astrocytoma w/ mild spasticity	40 months	2 months

* *SH = Spastic hypotonia*
SQ = Spastic quadriplegia
SZ = Seizures

All switch closures and observational codes are input directly to the Apple II microcomputer. The microcomputer is responsive to active learners because it allows ongoing analysis and communicates to parents, via graphic displays on a home television, the progress their handicapped infant has made. The microcomputer can detect changes in behavior and respond. For example, the microcomputer can assess any significant departure from an infant's normal response rate. If there is a departure the computer automatically can change the contingency.

The Results

The data will be presented separately for the moderately handicapped and the multiply handicapped subjects. Since all of the infants involved in the project initially were operating at or below the primary circular reaction level of the curriculum, we will consider the data only for the initial contingency learning.

Moderately Handicapped Infants.

Analysis of the moderately handicapped subjects' performance revealed different patterns of learning. Two of the Down's syndrome children (Rosa and Jennifer) exhibited immediate differentiation of the reinforced from the nonreinforced responses. The reinforced response rate increased above the initial baseline level while the nonreinforced response rate decreased below the initial baseline level for these two children. Thus, the reinforced response was emitted at a consistently higher level than the nonreinforced response. When the reinforcement contingencies were reversed, the pattern of responses also reversed. Again the change in the pattern of response was immediate and the new pattern was maintained across the session.

Two other children showed a gradual differentiation of the reinforced and nonreinforced responses. Sessions with Hugh and Juliet revealed a gradual change in differentiation of reinforced leg responses from nonreinforced arm responses. For Hugh, the leg responses did not remain clearly differentiated from the arm responses during leg contingencies. However, both infants showed clear differentiation of arm and leg responses during arm contingencies.

A fifth child, Troy, showed no clear learning in spite of several efforts. This child appeared interested in the learning situation and remained involved in it for 27 sessions (average length of 12 minutes). Since Troy responded at a relatively high rate with both responses, it is quite possible some pattern of responses involving both manipulanda was reinforced accidentally. Analyses currently are being undertaken to examine this possibility.

Memory differences among these children are being analyzed by comparing the relative rates of response during the last minute and during the first minute of an intervention session.

Analyses of "learning to learn" for these children also are being conducted. The measure of learning to learn will be based on changes in the relative response rate within sessions. If children have acquired a generalized expectation that their behavior controls events in the environment, then they should be more sensitive to new contingencies when they are available. Across sessions, this developing "contingency awareness" would be reflected in a more rapid differentiation of response rates, that is, increasingly large changes in relative response rates within sessions. If the child has learned to learn, within-session responses should exhibit more rapid response differentiation after one response has been learned. Moreover, the magnitude of this within-session response differentiation should stabilize in fewer sessions for the second contingency learning than had been shown during the first contingency experience. These hypotheses will be tested in year five of the Contingency Intervention Project.

Multihandicapped Children.

Sally learned to move her arm to produce a tape recording of music. Though her arm response rate was lower in the first session, this response accelerated above the rate of kicking. Later, tape-recorded music reinforced Sally's kicking and a musical mechanical toy reinforced her arm movements. The rates of kicking and arm movement accelerated above the rates when only the arm movement was reinforced. Both responses accelerated above the baseline rates of three per minute for the arm movement and two per minute for kicking.

Tracy's kicking was reinforced with recorded music. The baseline arm movement rate was less than one per minute while the kicking rate was less than three per minute. After five sessions of contingency experience, her rate of arm and leg movement had not changed. During the sixth session, a tape of Tracy's mother's voice was introduced and both response rates rose considerably. At the thirteenth session, reinforcement was contingent upon arm movement rather than kicking. The drop in the kicking rate suggests a clear differentiation of the reinforced from the nonreinforced responses.

Mary was taught first to move her right arm to produce tape-recorded music. Her right arm response rate rose from a baseline level of three to four per minute to a response rate of more than six per minute in sessions five and six. One effect of Mary's inoperable brain tumor is general motor impairment that seems more severe on the left side of her body. In early sessions, Mary usually held her left hand up next to her face with the fist clenched. In session seven, the contingency was reversed from the right to the left arm. The initial effect was that Mary moved her left arm to midline then moved the left arm by using her right hand. However, by session ten, she began to move her left arm without the assistance of her right hand. The staff at Mary's day care center noted that after these sessions Mary seemed to have her left hand in midline a considerably greater proportion of the time.

Sian's kicking initially was reinforced with vibration of a motorized pad. The initial baseline rate was two per minute. In the classroom, Sian generally sat in a totally flexed posture with her head on her chest. The baseline rate at which she raised her head off her chest was between three and four per minute. After three sessions, the contingency for kicking clearly raised the rate of that response above baseline and above the head-raising rate. The contingencies were then changed so Sian's head-raising was reinforced. By the seventh session, the reinforced head-raising response clearly was differentiated from the kicking response. It is important to note that this and all other response differentiation found in the Contingency Intervention Project occurred without specific schedule restraints such as those which delay reinforcement when a nonreinforced response is emitted.

Discussion

The Contingency Intervention Project shows several points. First, handicapped infants as young as four months can learn simple operant responses with traditional discrete reinforcement schedules. Second, these infants and their parents and teachers will remain interested in the contingencies presented and will stay actively involved in learning sessions (11-minute average length) for up to six months. Third, the patterns of learning of these children may have important implications for the way we assess handicapped infants. Though the issue is speculative at this point, there may be a relationship between these early patterns of development and more traditional forms of developmental assessment.

Bayley scores were available for three of the moderately handicapped infants who participated in the Contingency Intervention Project. Jennifer and Juliet both learned the initial contingencies though at somewhat different rates. Their performance on the Bayley yielded MDI scores of 64 for Juliet and 62 for Jennifer (both at age 4 months) immediately preceding the intervention. After intervention there was a moderate increase; Jennifer's MDI at 10 months was 79 after 50 intervention sessions while Juliet's at 1 year was 70 af-

ter 39 sessions. Troy showed no clear indication that he learned how to produce the consequences. Troy's MDI was not calculable at the beginning or end of the project. His mental age (MA) was 5 months at 13 months of age. After 27 contingency intervention sessions, his MA was 5.5 months at 20 months of age.

The contingency intervention system may offer an important assessment device. And, data produced by a dynamic assessment of learning and the consequences which produce learning have more direct prescriptive use than a static normative assessment (Brinker & Chatelanat, in preparation). This was particularly evident for the multihandicapped children. While each of these children performed at the very bottom of the Bayley (MA was 2 months), their learning revealed unsuspected competencies. Feuerstein (1980 a, b) emphasizes that dynamic assessment has advantages over static normative assessment for older handicapped children. The contingency intervention system enables us to extend this idea to include preschool children and infants.

Learning by the multihandicapped children was particularly interesting. Initially, the parents and teachers were pleased at our interest in their children but were skeptical of the children's ability to learn. And, our own observations of the children made us question whether they emitted enough voluntary movement of *any sort* which could be shaped into operant responses. These children generally spent much of their classroom time in the position in which they had been placed. They did not interact with available objects or demonstrate interest or motivation in other people or things.

We were surprised when Sian in a relatively short time clearly increased the behaviors which were reinforced and clearly detected changes in the contingencies of reinforcement. And in the early learning sessions, she began to vocalize more. We were surprised when Mary began to use her previously conditioned right hand to move her left hand which had considerably more spasticity. We also were surprised when Sally and Tracy began smiling and laughing when placed in the contingency intervention seat and later when they produced consequences.

It was suggested that learned helplessness usually is a very accurate description of the behavior of children with severe multiple handicaps. But, contingencies between environmental events and behavior results in an awareness and heightened interest in the world. The promise for the future is that once such awareness is established, increasingly complex explorations of the world can be arranged through the synergy of theory and technology.

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Chapter 5

Intervention with the Very Youngest

by Nancy Sweet, Kathy VandenBerg, and Bette Flushman

Intervention in the first year of life presents special challenges. As we will describe, the young infant population has special characteristics which demand expertise and intervention approaches different from those appropriate for older handicapped children.

Though these young infants demand specialized knowledge and methods of early intervention, we believe the basic principles we will describe can and should be applied to the older infant and toddler. In brief, these principles are:

- *Intervention should maximize the individual infant's developmental, interactive, and initiative strengths by assessing and prescribing for each as an active and unique developing individual.* Distinction of individual and common developmental changes in capacities, sensitivities, needs, and responses of the young infant is vital to effective intervention. Individualization of expectations and approach is essential.
- *Intervention must deal with the infant within the family context, and as a significant element in the dynamics of the family.* The parent must have an active role, even in the medical setting of the intensive care nursery. Family participation, family education, and emotional support for the family are inseparable from intervention with the infant.
- *Intervention with the very youngest must be concerned with the positive and negative developmental impact of the infant's total environment.* This includes the physical and social environment twenty-four hours daily, seven days weekly. Earlier concepts of infant stimulation and even infant curricula are only isolated aspects of developmental intervention. Very early intervention may be as concerned with reducing or modifying stimulation as with providing it.
- *Early intervention must be based on the concept of a developmental continuum.* In early infancy, developmental outcomes are least predictable and most vulnerable to environmental and organismic factors. The premature infant at great apparent risk may develop normally after the early infancy period. Intervention must be appropriate to the individual infant and family rather than to categories of high-risk or handicapping conditions. Otherwise, potential for normal developmental patterns may not be recognized or encouraged. This is true even for infants with identified handicaps such as genetic anomalies.
- *Very early intervention demands multidisciplinary expertise.* Health and psychosocial needs of the high-risk and handicapped infant are inseparable from developmental/educational needs. The interventionist must become a generalist, amassing the working knowledge of several disciplines as they apply to the young infant.

The Child Development Center

The Child Development Center of Children's Hospital Medical Center at Oakland, California, specializes in the prevention, diagnosis, and remediation of developmental disabilities in the young child. The center is distinguished by an unusual combination of diagnostic and treatment services which permit a rapid transition from early identification to early intervention components.

A second rather unique feature of the Child Development Center is that it deals with the full range of developmental concerns in young children. It is involved in screening, intervention, and follow-up with neonates in our large tertiary Intensive Care Nursery (ICN), and with newborns with inborn errors of metabolism such as PKU or hypothyroidism. The center also provides services to young infants with known or suspected handicapping conditions. Two model programs of the Handicapped Children's Early Education Program, the Parent-Infant Project (now five years old) and the ICN Interact Project (now in its second model program year), provide early intervention to high-risk and handicapped infants in the first weeks, months, and year of life.

As an integral part of Children's Hospital and the

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Child Development Center, these early intervention programs can begin intervention at the earliest, most critical period for the family, the point at which the premature or other high-risk newborn is transferred to the ICN, or the point at which delays or disabilities are identified.

The Premature Infant

Medical Characteristics

In the ICN, the infant is frequently as young as 25 weeks gestational age and may be as small as 500 grams (about three-fourths of a pound). The youngest and smallest of these infants are at particularly high risk both for immediate life-threatening medical complications and for later developmental problems. Acute problems include respiratory distress, infection, cardiac and neurologic problems, adrenal and nutritional difficulties.

Approximately 10 percent of the infants develop bronchopulmonary dysplasia (BPD), a scarring of the lung tissue as a result of ventilation therapy. These babies may be chronically ill for several years and are especially prone to periods of respiratory distress in the first months after discharge from the hospital.

Another complication with long-term developmental implications for the premature infant is retrolental fibroplasia (RLF). The result of the toxicity of oxygen to the premature retina, RLF may cause visual impairment. There has been a re-emergence of RLF as a correlate of advances in neonatal care which ensure the survival of younger and smaller premature infants.

Other complications may include intracranial bleeding and hydrocephalus with possible damage to the brain tissue. Necrotizing enterocolitis (NEC) may result in destruction of portions of the intestine, surgical removal, and long-term hospitalization and nutritional therapy.

Behavioral Characteristics

Excellent descriptions of the behavioral characteristics of the premature newborn may be found in the work of Gorski and Als. Generally, the premature infant in the ICN shows an extremely limited behavioral repertoire and capacity to accommodate and adjust to stimuli. Alert periods are brief. The premature infant often is critically ill, and convalescense and weight gain demand much of the infant's energy. Gorski (1979) identifies three stages in the developmental course of the premature which have direct implications for intervention:

- *The stage of physiological organization* in which the integrity and stability of state, respiratory, and other physiological systems must develop and alert periods have not yet emerged;
- *The beginnings of organized behavioral responsiveness* in which minimal control of physiological systems is established and the premature infant begins to show brief alert states and to respond to outside stimuli. During this period the caregiver and environment may be particularly critical factors in the growth and development of the infant;
- *Active reciprocity with the environment* at which point the infant is able to sustain periods of alert interaction with people and objects in the environment. Now the infant becomes a truly active participant in relationships and is able to elicit and respond to social interaction. The model of expanding infant organization proposed by Als, Lest, and Brazelton (1979) sets the development of differentiation and control within the larger feedback system with a caretaker.

Some behavioral similarities appear among premature infants with other early complications. Lethargy, reduced sensory responsiveness, continued physiologic and state disorganization, and increased irritability frequently are seen in babies with neurological complications. Babies with BPD are irritable and difficult to sooth or feed, tire easily, and may give the caregiver little positive feedback.

Impact on the Family

Parents of significantly premature infants must cope with the premature birth itself, which comes months before many are physically or mentally prepared for it. The anticipated healthy baby abruptly is gone, and the family must accept the sick premature infant in its place. Grief, guilt, and anxiety are common.

The parents must cope with the physical appearance and medical problems of the premature infant. Survival may be threatened, and if the baby survives, there may be continuing problems such as BPD or RLF. The baby is small, frail, thin, and very pale in comparison to a healthy, full-term newborn. The appearance and behavioral characteristics of the premature infant can affect the parent-child relationship immediately (Minde, 1980).

Finally, the parents must cope with the ICN. The first sight of the ICN invariably is a shock. The baby is surrounded by a mass of technical life-saving equipment and skilled health personnel. Parent and baby may be separated for long periods. The parents usually feel that they have little control over, or role in, the baby's course in the ICN.

The stresses of having a premature infant do not end with a successful course of treatment in the ICN. Many

with a successful course of treatment in the ICN. Many preterm infants demand sensitive and patient caregiving in the first year of life (Brazelton, 1981). The premature infant's sleeping, feeding, and autonomic patterns often appear to be less consistent than a full-term newborn. The premature baby's attention, social interaction, movement and responses to environmental stimulation also may appear less organized. The physical fragility and easy tiring of the infant may be perceived by the parents as irritability. This is particularly true of the baby with BPD.

Fortunately, as Beckwith (1978) discovered, mothers of premature infants try and often are able to compensate in interaction the difficulties which characterize these infants.

The Seriously Ill Infant

Medical Characteristics

The newborn premature infant is the most frequent, but not the only, young inhabitant of the medical setting. Other infants in the ICN and pediatric intensive care units require continuous or recurring medical care (the full-term SGA—small for gestational age—baby, the baby with serious congenital anomalies such as a heart defect, the baby with infections or physiological responses to maternal prenatal conditions such as diabetes or drug addiction, and the baby with postnatal complications which require surgery or other special care).

Any of these babies may spend their initial weeks or months of life in the ICN, or they may leave only to return frequently during their initial year of life.

Like the premature infant, this high-risk or chronically ill infant may be in jeopardy for survival and growth. Diagnosis and long term prognosis for some of these infants may be uncertain.

Behavioral Characteristics

Behavioral characteristics of these infants vary according to medical factors and developmental age. More effective early intervention, beginning with the ICN, will be possible as common behavioral characteristics are identified. The infant with SGA provides a good example.

Als et al (1976) found the full-term SGA baby differs from full-term, full-weight babies in motor behavior and interactional processes. The SGA baby tends to show irritability and low levels of alertness; hypersensitivity to environmental stimulation; and poor defensive reactions, muscle tone, and hand-to-mouth coordination. These babies tire easily, are difficult to soothe, and do not sustain social interaction well. They appear to prefer to be left alone.

Impact on the Family

Parents of seriously ill infants may have to cope with many of the stresses which confront the parent of the premature infant. Survival of the infant may be a concern, and even if it is not, the parent still must accept the sick newborn in place of the expected healthy infant. The ICN environment and separation from the infant are stressful, though parents of seriously ill infants do not have to confront the immaturity of appearance and behavioral organization characteristics of the premature infant.

When prenatal factors that may have caused the infant's condition are identified, parents may feel responsible for their child's problems. An uncertain diagnosis and prognosis also can be extremely stressful for the parent. Confidence in their capabilities as parents may be threatened by the infant who does not grow and thrive. Chronic health problems and recurrent crises may put the parents into frequent states of anxiety and helplessness.

Even when the medical course is good, these high-risk infants may place additional strains on parental capabilities because of poor behavior organization and irritability in the first year of life. Though the SGA infant was found by Als et al to test normally on standardized developmental measures at one year, the parent-infant relationship was found to be anything but normal. Mothers felt helpless to deal with—and rejected by—these difficult babies.

The Developmentally Disabled Infant

Medical Characteristics

The premature and the other seriously ill infant may present clear evidence of developmental disabilities in the first year of life. However, many of these infants, even those at greatest risk, show marvelous recuperative and integrative capacities. As Parmelee (1979) suggests, potential for normal development should not be underestimated on the basis of early infancy risk factors (though the longitudinal follow-up of high-risk infants by many researchers including Jane Hunt (1981) indicates the increased incidence of later and sometimes milder disabilities which may be impossible to predict during early infancy).

The infant with certain disabilities may be identified initially in the ICN or pediatric ICU, but most are not. Many infants with genetic anomalies do not require special care at birth and so will be missed by

intervention systems set up for the high-risk infants staying in the ICN.

Common genetic anomalies, such as Down's syndrome, spina bifida, and other physical malformations, may be identified or suspected at birth. Many other disabilities can be ascertained within the first nine months of life, even if they are not identified at birth. These include delays of unknown origin, cerebral palsy, sensory impairment, or less common congenital syndromes.

Access of early intervention to many young disabled infants relies on identification and referral from primary and secondary health-care facilities, pediatricians, public health nurses, and other health professionals. Early identification and access are problematic at best and may hinge on the concerns of the parent and the availability of skilled diagnosticians. Early identification should, but frequently does not, coincide with early intervention and support for the family. However, our experience at the Child Development Center indicates that many disabled infants can be identified and begin receiving early intervention within days, weeks, or months of birth.

Behavioral Characteristics

The disabled young infant may present behavioral and developmental characteristics which range from average or near average in the first year of life, either globally (such as an infant with Down's syndrome) or in certain developmental areas (such as the infant with spina bifida who shows severe motor limitations but normal or near normal nonmotor development), to primitive characteristics typical of the normal neonate or premature infant.

Behavioral characteristics common to certain types of disabilities may be of great significance to early intervention efforts from birth. The blind infant for example, as Als (1980) and Fraiberg (1977) identify, shows developmental progressions and behavioral characteristics which will have cumulative impact on the parent-child relationship. The cerebral-palsied infant may not adjust to being held and soothed by the parent, and feeding may be a nightmare. An understanding of early behavioral characteristics of the disabled young infant allows the interventionist to prevent or minimize unrewarding parent-infant interactions and to encourage interactional patterns which maximize infant development and parental satisfaction.

Though there are behavioral characteristics common to certain types of infant disabilities, very early intervention in a medical setting clarifies the need to view disabled infants as individually as high-risk infants. One infant with Down's syndrome may show average or above average capacities while another with a heart defect, chronic respiratory infections, or seizures may not. Disabled infants are more vulnerable to other medical problems and the developmental course in the first year will be inseparable from health status. Early intervention cannot wait until health stabilizes, nor can it assume a common beginning point or rate of progress for infants with similar disabilities. The family must be assisted in accepting and encouraging the development of that individual baby, whatever the course of the first year.

Impact on the Family

Our work at the Child Development Center suggests that early infancy is a critical period in the relationship between a family and a disabled child. Patterns of interaction and parental confidence in their ability to nurture an atypical child may be shaped during the first year. The attachment relationships and the amount of developmental stimulation given to the infant by the parent may be limited by the early label of Down's syndrome; by the distorted cues and responses of the multihandicapped, sensory-impaired, or cerebral-palsied infant; or by the frustrations and uncertainties of emerging developmental delays. Disruption of the family by a disabled infant may correlate with parental depression, increased marital conflict, or behavioral problems in siblings. Early intervention can prevent or ameliorate some of these stresses.

The premature, seriously ill, and disabled young infant may present very different medical and behavioral characteristics in the first year of life. Each may cause serious yet very different stresses for the new parent, the dynamics of the whole family, and for the emerging parent-child relationship. Intervention in early infancy must recognize the special needs and common characteristics of these subpopulations. A good review of the research on early developmental risk is provided by Kopp and Parmelee (1979). The remainder of this chapter will discuss effective principles and approaches to intervention. Particular emphasis will be placed on intervention beginning in the medical setting with the very young infant. The chapter will conclude with two brief case descriptions which illustrate actual intervention techniques.

Intervention

Intervention should maximize the infant's developmental, interactive, and initiative strengths by assess-

ing and prescribing for each as an active and unique developing individual.

Central to our model of intervention with young infants is the concept of individual capacity. Individual capacity in the infant is defined by maturational age and status and by the infant's unique pattern of behavior.

Infancy is normally a period of rapid and complex maturational changes. Identification of the common sequences and characteristics of infant development provides the basis for assessment tools and developmental curricula. Much work of this type has been done in recent years for handicapped preschoolers and infants. Similar work has been initiated for the high-risk and even premature newborn. Assessments such as the Brazelton Neonatal Behavioral Assessment (1973) and the Assessment of Premature Infant Behavior by Als et al (1981) are useful in determining the behavioral/developmental status of the newborn. Curricula for the very young infant, even in the ICN, have been initiated by VanDevender and others. ICN curricula are based on a growing body of research supporting benefits of supplemental stimulation for premature infants (see Masi, 1979, for a review of this research).

A great deal of work remains in identifying significant parameters of developmental and effective interventions for the high-risk newborn. The younger the infant, the more limited the behavioral repertoire and the more subtle the indicators of developmental processes. We believe that the work of Gorski and Als with the premature infant are significant contributions toward the ability to recognize and incorporate individual variability into developmental curricula. As Brazelton and Korner with the full-term newborn, and Fraiberg with the handicapped infant, these authors have illustrated the need for careful observation of the behavior of individual infants and parent-child (or caregiver-child in the ICN) interactions. All these authors view the young infant as an active participant in the determination of the developmental outcome. Gorski points out that in the case of the premature and other high-risk infant in intensive care, interactive and behavioral characteristics may be related vitally to medical status and even survival.

The behavioral repertoire of the very young infant is limited, and so are the specific activities and procedures of intervention. Intervention becomes more complex, however, when consideration of individual infant capacities leads to a concern for consistency, timing, pattern, and readiness for stimulation. We believe our knowledge of high-risk and handicapped infants is sufficiently advanced to permit us to be concerned not merely with providing additional stimulation, but with ensuring that each infant receives developmentally and individually appropriate stimulation. This may mean a reduction or modification as frequently as an increase in stimulation. And as Als points out, it also will mean recognizing and aiding the infant's own resources for coping with stimulation.

For the premature, the chronically hospitalized, and the handicapped young infant, we will be concerned with developmental status and rate of progress in different areas of development. With these very young infants, we must be concerned also with state organization, attention, sensory thresholds and response patterns, basic capacities for social interaction, physiological integration, and methods of coping with stress.

Some of the specific techniques we use with infants in the ICN have been discussed elsewhere (VandenBerg 1981, Sweet 1981). ICN interventions are individualized on the basis of gestational age, behavioral/physiological observations, and developmental assessments (we are beginning use of the Assessment of Premature Infant Behavior, by Als et al, 1981). Interventions range from: 1) no handling, but provision of suggestions regarding handling by the nurse during basic care, such as diapering, changing tubes, or turning, and how to soothe the irritable infant: to 2) modification of the infant's ICN environment; to 3) increasing daily handling as the baby is able to tolerate it and according to weekly developmental goals based on assessment of the infant's capacities.

As the infant develops, we monitor differential progress in the traditional developmental areas of cognition, language, movement, and social interaction. We continue to be concerned with more qualitative aspects of the infant's interaction with the environment. We are concerned particularly with the developing parent-infant relationship; we view the parent and the infant as active determinants of that development.

Intervention must deal with the infant as a significant element in the dynamics of the family.

During early infancy, the family is the context for learning and development. The nurtured and encouraged young infant progresses not only toward increasingly differentiated skills, but also toward independence.

For the premature, seriously ill, or developmentally disabled infant, the family context may be a compensatory force with significant benefits for the infant's developmental prospects. The family *can* sustain consistent and sensitive interactions with the infant with special needs. However, success may be limited by the emotional impact of the infant's condition, by a lack of knowledge about the infant's cues and needs, and by lengthy hospitalizations.

We approach intervention with these infants and families within a general framework of parent devel-

opment and infant development. Parents cannot be taught simply what is appropriate for these infants. We have found the concept of parent development articulated by Bromwich, 1976 (and put into assessment form in the *Parent Behavior Progression*, 1978), to be particularly useful. Other developmental concepts, such as a grieving process, can be useful as they apply to our subpopulations of very young infants with special needs and their families.

Though the specific intervention procedures may be very different with the parents of these high-risk and handicapped young infants, the goals are the same:

- to encourage an interactive parental role with the infant;
- to help the parent understand the developmental and individual characteristics of the baby;
- to provide emotional support and encourage the parents' own capabilities in accepting and coping with the infants' special needs.

Intervention with parents of babies in the ICN attempts to help parents view the babies as human beings rather than biochemical entities or medical problems. The limited behavioral repertoire of the premature or seriously ill infant requires special efforts in identifying cues, responses, and developmentally appropriate expectations. Modeling of handling techniques and methods of providing or reducing social stimulation (even while the baby is recuperating and still hooked up to monitors, respirators, deep lines, and other apparatus) are important intervention techniques.

The ICN can put parents into a helpless position. Many ICNs now encourage parents to spend time in the nursery, but their role there is unclear. Though parents may not have the life-saving skills of ICN personnel, they can and should be encouraged, when they are emotionally ready, to take an active part in the infant's care. Developmental stimulation, caregiving activities, holding, rocking, and touching can be the parents' role. With guidance from the interventionist, parents can begin to identify the subtle cues and responses of the newborn and become the expert on their own infant's behavior (an essential skill when the infant goes home). For the premature, seriously ill, or handicapped infant who must remain in the ICN or ICU for long periods, an active program of developmental activities feasible in the medical setting can involve parents as active participants.

Transition to home is an important period in the development of the parent-child relationship. The parents of a chronically hospitalized newborn may not feel the baby is really theirs until the baby comes home. The parents of an infant diagnosed as handicapped may not know what to expect and may have difficulty in forming a basic attachment to the baby. The stresses of assuming complete care for a high-risk or handicapped baby often are great. The baby may require special medical procedures such as oxygen, gastrostomy feedings, or suctioning. Disturbances in feeding, sleeping, and general organization are common in the initial weeks at home. The irritability of the BPD or SGA baby or the brain-damaged baby may make the parent feel insufficient.

Developmental follow-up in the home during the first years of life of the high-risk and handicapped baby can have a tremendous positive impact on the parent-child relationship (Sweet, 1979). With the very young infant, encouragement of a positive parent-infant relationship is appropriate as a primary intervention goal.

Positive and negative developmental impact of the infant's total environment must be considered.

A great deal remains to be learned about the development of attention and memory in very young infants. Also, we know little about how attention and memory in the young infant are affected by prematurity, genetic disorders, or neurological complication. Behavioral observations of these infants suggest strongly that intervention must focus on the total environment and consistency of experiences. A number of research studies report significant benefits (in weight gain, medical course, or later developmental status) of even brief daily periods of sensory and vestibular stimulation of premature infants (see Masi, 1979). At the same time we see clinical evidence in infants hospitalized for long periods of the adverse effects of routine features of the hospital environment, such as multiple and inconsistent caregivers or the understimulating and overstimulating aspects of ICN care.

Though structured intervention sessions are beneficial for high-risk and handicapped infants, we do not believe they are sufficient to ensure optimal developmental progress. Instead, appropriate intervention and opportunities for learning need to be a consistent feature of the young infant's environment. This leads us to efforts to structure the infant's ICN and home environment. It also leads us to our emphasis on the key role of the parent (and in the ICN, the primary-care nurse). Primary caregivers constitute a large part of the social stimulation for the infant and can control somewhat the consistency of physical sources of stimulation during the day. A frequent objective of our intervention with high-risk and handicapped infants is to achieve consistency, from day to day or caregiver to caregiver, in handling, soothing, and contingently responding to the infant's behavior. Joint observations (with the parent or nurse) of the infant's behavior and modeling of the desired methods of interaction are key techniques to involve primary caregivers in providing

a consistently appropriate environment for the young infant. As part of the infant assessment process in the ICN, for example, the interventionist and the nurse will observe heart rate, respiratory color, and other changes in response to stimulation and routine caregiving procedures. The joint observation of an infant showing extreme reaction and stress to being talked to while being diapered, for instance, may lead to basic changes in the nurse's caregiving patterns.

Early intervention must be based on the concept of a developmental continuum.

Though prediction of developmental outcomes for high-risk and even handicapped children is least reliable in the early infancy period, we do try to identify which of the high-risk infants will be handicapped or the extent of handicapping conditions which are present in order to know which type of intervention program or community resource will be appropriate for each family. So, the desire to provide early intervention assistance is involved inextricably with a labeling process which is inappropriate at this age.

It is sad indeed when a very young infant must be labeled "disabled" just to receive funds for early intervention which may prevent disabilities. It seems reasonable to be concerned that any label for a high-risk baby may alter the family's expectations and interactions with that potentially normal baby.

In spite of massive literature on environmental risks for infants, there is little funding for developmental intervention with environmentally at-risk infants. The special education/rehabilitation services for the handicapped infant, neonatal health follow-up services for the medically high-risk infant, and new infant mental health movement for the environmentally at-risk infant have each evolved separately. While each of these populations has special needs, the populations overlap. The handicapped, premature, or chronically ill child is frequently at environmental risk. The infant who is medically at risk may become disabled, as may the deprived or neglected infant. Not only do the populations overlap, but as we have attempted to point out in this chapter, there are common developmental needs and intervention principles during the infancy period.

Perhaps we need a different approach which treats early infancy as a period of liability on a continuum of lesser to greater special developmental needs determined by biological and environmental factors. The greater the special developmental needs (whatever their source), the more intensive the early intervention. A continuum approach will enable us to maximize the potential for normal development in all these young infants. Early intervention in infancy, with an emphasis on identifying individual developmental needs and on assisting the establishment of a positive parent-infant relationship, could be integrated with more traditional education, health, and mental health resources as prognoses become more reliable in later infancy. Frequently, the need for this very early intervention will begin in the medical setting at or near the time of birth.

Very early intervention demands multidisciplinary expertise. The early interventionist must have a thorough base in normal and atypical infant development and in prenatal development. He or she must know up-to-date information about neonatal medical problems and treatments and about handicapping conditions and appropriate developmental curricula. The interventionist must be a parent educator skilled in parent-support techniques. And, the interventionist must be a generalist with an understanding of physiological, sensory, cognitive, motor, and communicative systems, and of intervention techniques appropriate to each. In the medical setting particularly, the early interventionist must be a member of a multidisciplinary team and is responsible for advocating developmental concerns as a vital aspect of medical treatment.

The pediatric hospital and the ICN are new settings for developmental intervention. Some characteristics of this new setting and role have been explored (Sweet, 1981). We are a long way from merging health, education, and psychosocial services to meet the needs of young infants and their families. We also have much to do to identify a comprehensive developmental curriculum for the very young. Nonetheless, there is increasing recognition in many medical settings of the need to meet developmental needs of the high-risk and handicapped young infant.

Cases

Following are two brief case descriptions. The first is of a premature baby in the ICN. The second is of a full-term baby with Down's syndrome and a serious heart defect.

Lisa

Lisa was born prematurely at approximately 26 weeks gestational age (full term is 40 weeks) and a weight of two pounds. She is the first child of her 32-year-old mother who had lost a premature baby at

birth the year before. After an emergency Caesarean section, Lisa required resuscitation because of her inability to maintain continuous breathing. Intubation and ventilation were required, and she was transported to our Intensive Care Nursery some 15 miles from her home.

Because Lisa was transferred from the hospital where she was born, her mother was unable to see her for several days. The mother made frequent phone contact with the ICN, and Lisa's father visited daily and brought photographs and reports back to his wife. Lisa's father felt a heavy burden during this period (trying to visit the baby, be involved in decisions about her health care, support his wife, and continue to work—all at the same time).

After three days, Lisa's mother was well enough to visit. The sights and sounds of the ICN were overwhelming. At first she could not see her baby, only the tubes, wires, and clicking monitors. The nurse caring for Lisa knew how difficult this first visit would be, and they tried to help Lisa's mother adjust to the equipment. Lisa's mother was hesitant even to touch the baby. Lisa seemed so frail and not at all the baby her mother had dreamed about.

Lisa's progress was steady and by 29 weeks her survival seemed certain. Since the neonatologists felt she would be in the ICN for another six to eight weeks, they referred her to the ICN Interact Project. Since she was still on a respirator and still too small and weak to be handled extensively, initial assessment consisted of close observation of her states and movements, respiration and cardiac rates, color, and facial expressions. These observations were recorded before, during, and after the nurse's handling during diapering, taking of vital signs, and other routine medical care procedures.

Even at this point, Lisa presented herself as an extremely calm baby, able to organize herself well. However, she showed a somewhat longer delay in response to handling than usual at that age. Several minutes after handling procedures were completed, she showed startles, tremors and increased activity. Generally by this time the nurse's attention would be turned elsewhere and her disorganized, stressed behavior would not be noticed. Recommendations were made to the nurses to spend several minutes with Lisa after caregiving procedures, with a hand covering the baby lightly in a way which would soothe her and assist her in re-establishing physiological control. Nurses also were alerted to an apparent sensitivity to noise.

During this early period, the ICN Interact Project staff person met with the parent several times weekly. Discussions centered on the baby's behavior and what to expect in the next few weeks. As the shock and uncertainty of the early weeks passed and Lisa's survival seemed more certain, Lisa's mother was able to talk a little about her feelings. She was eager to learn what the staff thought of Lisa's behavior and strengths and was delighted when together they observed subtle changes in Lisa's alert periods. Lisa's mother was beginning to react to Lisa as a baby and was able to start holding her, though a little awkwardly, with signs of pleasure.

By 35 weeks gestational age Lisa was off the respirator. Developmental evaluation now included assessment of motor maturity and movement patterns, response to simple visual and auditory stimuli, activity, arousal levels, and response to caregivers. Lisa now was able to maintain an alert state for two to three minutes and to focus briefly and soberly on the caregiver's face.

Lisa's mother was involved actively carrying out the weekly developmental activities such as holding Lisa, offering her face, and if the baby remained alert without signs of stress, talking gently to her. Appropriate visual stimuli were rotated every few days in the isolette. Mother and staff also worked on stimulating grasp and positioning the baby so that she could bring her hand to her mouth and begin to soothe herself.

At 38 weeks corrected age, Lisa could maintain an alert state for three to five minutes, occasionally as long as 10 minutes when visually attending a face or object. Efforts by her mother and staff to stimulate Lisa's suck were followed by her first feeding by mouth which, though slow, did not stress the baby unduly.

As Lisa passed her expected due date, she was reevaluated. Visual and particularly auditory sensitivity to stimulation was good. Developmental goals now included visual tracking and orienting and searching for sounds. Lisa's parents were encouraged to take her out of the noisy ICN to a quiet room where they could work on these developmental activities. With much help and encouragement, Lisa's mother began to try breast feeding as part of Lisa's feeding. After many false starts, Lisa adapted well to combined breast feeding and bottle feeding. It was particularly clear during these feedings that an attachment was forming between mother and baby. Lisa's mother now handled tiny Lisa confidently and stroked her gently and calmly while she fed.

Finally, Lisa was discharged from the ICN directly to home. Neurological and sensory function seemed good and weight gain had been steady. The project staff spent much time preparing and reassuring the parents about the first few weeks at home. Lisa's box of toys went home with her, as did suggested developmental activities to try once Lisa settled into a routine. At the first home visit about 10 days after Lisa's discharge, project staff found the family doing well.

Robert

Robert is a full-term baby identified at birth as having Down's syndrome. His early medical course indicated the presence of a congenital heart defect, and he was kept for three days of observation in the community hospital where he was born. After two weeks at home, Robert began having cyanotic episodes which worsened. He was admitted to Children's Hospital's pediatric ICU for tests and possible surgery. The Parent-Infant Project received simultaneous referrals of the family from the social worker on the ICU and from the Department of Medical Genetics which had just completed Robert's chromosome study. The first contacts were made with the family while the baby was in the ICU with an uncertain prognosis.

Robert's family was in great emotional distress. They knew nothing about Down's syndrome or what it would mean for Robert. They were bitter about the way they had been informed about his disability. Now they also had the life-threatening heart problem to handle. It was clear from the visit on the ward that they were ambivalent about the baby; they interacted very little with Robert and talked mostly about the medical procedures and problems.

Though the heart defect was serious, immediate surgery was not necessary for Robert's survival. After a week of recuperation, Robert was able to return home. The possibility of later surgery depended on growth and weight gain during the neonatal period and on whether the heart defect showed any self-correction.

Robert's pediatrician was concerned when he learned that the baby had been referred to the Parent-Infant Project, since he felt that infant stimulation might endanger Robert's health. He was reassured to learn that project staff initially would focus only on structuring the infant's home environment, providing visual and auditory stimulation, and providing support and education for the parents.

Weekly home visits began immediately. Robert's mother was in tears during most of the initial visits. Robert's father was available only infrequently; he refused to admit that the baby had Down's syndrome. Robert's mother reported that she and her husband were having great difficulty in talking about the baby's condition.

During the initial weeks of the project's involvement, the baby slept a great deal. Cyanotic episodes were occasional with decreasing intensity. During alert periods, however, project staff were able to identify some of the baby's strengths including good visual attention, tracking, and response to the human face. Together, the parent and teacher planned a crib apparatus with changeable parts to encourage these visual strengths and the development of visually guided reaching. Robert's mother began to gain some pleasure from providing new objects for Robert to look at and track, and from the improvements she saw in his attention to his environment.

Robert grew and gained strength, and new skills emerged in other areas of his development. On the basis of multidisciplinary assessment of his health and emerging skills, developmental activities were expanded, and Robert and his mother began attending a group program with other parents and handicapped infants. The opportunity to see how normally Down's syndrome infants behaved and to talk with other parents of babies with special needs was a great benefit to Robert's mother. As she became more active in home and group activities, she reported feeling less helpless and more confident of her abilities to cope with Robert's developmental and medical needs.

Project staff made efforts to involve Robert's father in a more positive way. A sequence of marital counseling sessions in the home helped to clarify some of both parents' feelings of sadness and guilt and some cultural values related to handicapped people which made it hard for them to talk about Robert with other family members.

The father was given some suggestions for equipment to make for the baby, and he enjoyed this activity. Finally, the father joined Robert's mother and attended one of the Saturday morning family workshops where he had some contact with other fathers and babies. Without ever talking very much about his feelings or concerns, Robert's father began taking a more active part in playing with the baby and doing some of the activities suggested for Robert. He developed a few games of his own with Robert which elicited great laughter from the baby. He also began gathering information about legislation relating to handicapped children and about advocacy groups in the area.

The severity of Robert's heart condition had lessened by age 18 months. Developmental assessments showed a slow increase in his rate of development. A good attention span and fine motor coordination still distinguished his play. Motor development continued to be restrained by low levels of physical energy, but with his father's help he was doing a lot of walking with minimal support. Since a hearing test at six months had revealed a moderate hearing loss, Robert had been fitted with a hearing aid. Sign language coincident with a strong focus on language development activities had resulted in a substantial improvement in his ability to communicate.

Though there were periods of sadness, discouragement, and concern for Robert's future, his parents demonstrated real affection for the baby. They were proud of the progress he had made. They saw that he

was beginning to emerge into the new, more social, and more independent toddler phase. They in turn felt more comfortable to go ahead with some of their postponed plans for a vacation and a part-time job for Robert's mother.

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Sweet, N. New Faces and Approaches in the Intensive Care Nursery: The Role of the Educational Specialist. Paper presented at the TADS/WESTAR Conference on Health Care/Education Relationship: Services for Infants With Special Needs and Their Families. New Orleans: March, 1981.

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Part II

Bibliography and Resources

Introduction

Curricula included in the bibliography are from a variety of sources. Most were obtained from the annual survey of Demonstration and Outreach projects of the Handicapped Children's Early Education Program (HCEEP). Information from the survey is included in the *HCEEP Overview and Directory* (TADS and WESTAR) published yearly. Respondents to this survey indicate which curricula and assessment instruments they use or have developed for planning programs. Also, literature searches and informal surveys of infant educators and researchers were conducted.

The annotations which follow were gleaned from a pool of approximately 200 items. The common usage of "curricular materials" includes curricula, activity resources, and some assessment instruments which yield objectives for instruction. In the present context, a curriculum has a theoretical/philosophical base, sequenced steps or objectives, statements of entering and terminal behaviors, and teaching strategies and procedures. Assessment instruments provide a statement of present status but might not provide direction for programming either in appropriate sequencing or teaching procedures. Activity resources focus on materials rather than the goal of developing skill sequences (for example, things to do in the bathtub, activities with a ball). This category includes commercially marketed toy series.

Some materials are borderline. Many curricular materials tacitly assume that given a reasonable content structure, teachers will have the skills to break a task into teaching steps, to teach, and to determine correctly when mastery has occurred. Others assume that given many ideas for interacting with children, the teacher will select the correct sequence of these activities based on the child's developmental needs.

With the specifications outlined above, criteria for inclusion were: field-test data available or material produced by validated project, representative of philosophical or theoretical base, appropriate for a specific handicapping condition, and availablity. Criteria were not strictly adhered to, nor did a given curriculum necessarily meet all criteria. Some subjective inclusions were made. For example, some materials under development are included so practitioners will be aware of vanguard efforts to solve specific curricular problems. Descriptions, therefore, vary in length and amount of detail.

A few infant curricula not specifically designated for handicapped infants also were included. Curricula specified for handicapped infants usually have a greater number of behaviors identified for intervention, more structure and specificity, and frequently, sequences of adaptive behavior or positioning techniques to ameliorate the effects of the handicap. Some curricula for nonhandicapped infants do provide comprehensive, sequentially arranged, and structured developmental goals and activities. Further, because these materials are commercially produced for a larger market, they typically are well-illustrated. Parents may find these curricula appealing, especially when the child is at risk without an identifiable handicap.

The descriptions of the curricula were not written by the authors of the included materials. The inclusion of a curriculum within the bibliography is *not* an endorsement by TADS.

A single master curriculum cannot meet the needs

of all high-risk and handicapped infants, therefore, the reader is advised to become familiar with the content presented in Part I. These chapters put many of the reviewed curricula into an intervention context. This enables the educator to make the best possible match between intervention and the age and condition of the infant and characteristics of the family.

The reader should then peruse the annotations, consulting the Index (arranged by topic) for specific materials. Familiarity with the organization of the Index will enhance the utility of this volume.

The individual annotations are listed alphabetically and include title, author, date of publication, format, cost, ordering information, and a brief description of content and organization. Readers desiring further information on a given curriculum have two options:

- Request a review copy. Some publishers will allow you to keep this copy, others allow 15- to 30-day approval periods during which materials can be returned for credit. Toll-free telephone numbers are provided when available.
- Cross-reference with the Index of the *HCEEP Overview and Directory* to reveal which HCEEP projects use the curriculum under consideration, and contact those projects. Technical assistance centers (TADS, WESTAR) also may be able to identify curriculum users.

Chapter 7, "Supplemental Resources," is a listing of other curricula bibliographies, reviews, product list publications, chapters, and monographs which focus on curricula for young handicapped children. The chapter also includes organizations associated with infant intervention.

List of Curricula Included in this Bibliography

Active Stimulation Curriculum and Manual, *6.1*

Birth to Three: Developmental Learning and the Handicapped Child, *6.2*

Carolina Curriculum for Handicapped Infants, *6.3*

Children Move to Learn: A Guide to Planning Gross-Motor Activities, *6.4*

Clinical and Educational Manual for Use with the Uzgiris and Hunt Scales of Infant Psychological Development, *6.5*

COMP Curriculum and COMP Curriculum Guide, *6.6*

Contingency Intervention Curriculum, *6.7*

Curriculum and Monitoring System (CAMS), *6.8*

Curriculum Guide: Hearing-Impaired Children Birth to Three Years and their Parents, *6.9*

DEBT Diaper Dudes, *6.10*

Developmental Physical Management Techniques for the Multidisabled Child, *6.11*

Developmental Pinpoints, *see Developmental Resource, 6.14*

Developmental Play as a Learning Tool—Birth to Three Years (Curriculum Guide for Infant-Toddler Educational Program), *6.12*

Developmental Programming for Infants and Young Children, *6.13*

Developmental Resource, Behavioral Sequences for Assessment and Program Planning, *6.14*

Developmental Sequence Performance Inventory and Infant Learning Program, *6.15*

Developmental Therapy for Young Children with Autistic Characteristics, *6.16*

Early Cognitive-Linguistic Intervention Strategy, *see Infant Learning, 6.26*

EMI-ART High-Risk Nursery Intervention Manual, *see From the Beginning, 6.19*

EMI Curriculum Pool Materials, *6.17*

Facilitating Children's Development: A Systematic Guide for Open Learning, Volume I—Infant and Toddler Learning Episodes, *6.18*

From the Beginning: The EMI-ART High-Risk Nursery Intervention Model, *6.19*

Good Beginnings, *6.20*

GUIDE: A Developmental Skills Attainment System (formerly, Vision Up), *6.21*

Guide to Early Developmental Training, *6.22*

Handling the Young Cerebral Palsied Child in the Home, *6.23*

Hawaii Early Learning Profile (HELP) and HELP Activity Guide, *6.24*

HICOMP, *see COMP Curriculum, 6.6*

HiScope Cognitively Oriented Curriculum, *see Good Beginnings, 6.20*

Infant ABECEDARY Program, *6.25*

Infant Learning: A Cognitive-Linguistic Intervention Strategy, *6.26*

Infant Stimulation Curriculum, *6.27*

Infant/Toddler: Introducing Your Child to the Joy of Learning, *6.28*

Infant/Toddler Learning Program, *see 6.28*

Kids Curriculum Package, *6.29*

Koontz Child Developmental Program: Training Activities for the First 48 Months, *6.30*

Language Stimulation Curriculum File, *6.31*

Learningames for the First Three Years: A Program for a Center/Home Partnership, *6.32*

Macomb 0-3 Regional Project Core Curriculum, *6.33*

Neurorehabilitation: A Multisensory Approach, *6.34*

Nisonger Curriculum, *see Infant Stimulation Curriculum, 6.27*

Parent-Infant Communication: A Program of Clinical and Home Training for Parents and Hearing-Impaired Infants, *6.35*

Peabody Developmental Scales and Programmed Activities, *6.36*

Perceptual Motor Play Program: Social Learning Curriculum for the Developmentally Delayed, *6.37*

Personalized Learning Plans, The Manual for the Development and Implementation of, *6.38*

Portage Guide to Early Education (Revised Edition), *6.39*

Program Guide for Infants and Toddlers with Neuromotor and Other Developmental Disabilities, *6.40*

Program Guidelines for Children with Feeding Problems, *6.41*

RISE Computerized Checklist and Curriculum, *6.42*

Sensorimotor Evaluation and Treatment Procedures for Allied Health Personnel, *see Neurorehabilitation, 6.34*

Ski*Hi Model: Programming for Hearing-Impaired Infants through Amplification and Home Intervention, *6.43*

Small Wonder Level 1, Small Wonder Level 2, *6.44*

Social Learning Curriculum, *see Perceptual Motor Play Program, 6.37*

Step-By-Step Learning Guide for Retarded Infants and Children, *6.45*

Teaching Research Curriculum for Moderately and Severely Handicapped (Language), *6.46*

Teaching Research Curriculum for Moderately and Severely Handicapped (Self-Help and Cognitive, Gross and Fine Motor), *6.47*

Teaching Your Down's Syndrome Child: A Guide for Parents, *6.48*

Total Baby Development, *6.49*

Training Prerequisites to Verbal Behavior, *6.50*

Vision Up, *see GUIDE, 6.21*

West Virginia System, *6.51*

Working with Parents and Infants: An Interactional Approach, *6.52*

Young Children in Action, *see Good Beginnings, 6.20*

Chapter 6

The Curricula Bibliography

by James O. Cox and Joan D. Anderson, TADS

6.1 Active Stimulation Curriculum and Manual

Author:
Edmond S. Zuromski
Available from:
Educational Technology Center, Inc.
Box 64
Foster, Rhode Island 02825
(401) 822-4622
Date of Publication:
In press
Cost:
Available to replication sites; experimental version is available for cost of photocopying (about $3)
Format:
Photocopy
Description:
Active Stimulation is designed for severely/profoundly, orthopedically handicapped children. The main feature is the integration of assistive devices with teaching sequences. Specifications for building the devices are contained in an equipment manual (request separately). This curriculum is functionally sequenced and is not oriented to a developmental model.

6.2 Birth to Three: Developmental Learning and the Handicapped Child

Author:
Tina E. Bangs
Available from:
Teaching Resources
50 Pond Park Road
Hingham, Maine 02043
(800) 225-5406
Date of Publication:
1979
Cost:
$11.95
Format:
Paperback, 312 pages
Description:
This curriculum guide complements the *Birth to Three Developmental Scale*, by Bangs, and consists of two parts. Part One covers the foundations for instructional programming. Chapters include: "Acquisition of Language and Facets of Learning" (prelinguistic features, linguistic features, sensation, perception, attention, memory retrieval, and central processing); "Identification, Assessment, and Evaluation" (definitions, techniques for data collection, the multidisciplinary diagnostic team, process for instrument selection, problems related to screening, assessment and evaluation); "Handicapping Conditions" (hearing impairment, visual impairment, specific learning disabilities, retardation, aphasia, autism, multiple handicaps, summary profiles); "Parent Involvement" (parent-centered programs, the feeling level, the educational level); "Program Design and Delivery" (design for accountability, the planning phase, the instructional program).

Part two is the curriculum guide. Descriptions of behaviors in six-month intervals follow the categories of the *Birth to Three Developmental Scale:* language comprehension, language expression, problem solving, social/personal, motor. Sample lesson plans are presented in six-month developmental ranges (e.g., 18-24 months). These sample plans cross categories and include: activity, materials, procedure, home training suggestions, parent assignment, adaptations for handicapping condition.

6.3 Carolina Curriculum for Handicapped Infants

Author:
Nancy M. Johnson
Ken G. Jens
Susan M. Attermeier

Available from:
University Park Press
300 North Charles Street
Baltimore, Maryland 21201
(800) 638-7511
Date of Publication:
In press
Cost:
Not available
Format:
Paperback, 278 pages
Description:

The *Carolina Curriculum for Handicapped Infants* (CCHI) was developed in response to the need for curricular materials for severely handicapped infants and toddlers who function in the birth to two-year range. The birth to 12-month developmental level is being field-tested. The 12- to 24-month developmental level will be ready for field-testing this year. The CCHI is organized into 19 curriculum areas: tactile integration, auditory localization and object permanence; reaching and grasping; handwatching and space localization; functional use of objects; control of physical environment; gestural communication; gestural imitation; feeding; vocal imitation; vocal communication; responses to communication from others; social; gross motor-prone; gross motor-supine; gross motor-upright.

The 19 areas preclude the sequencing difficulties seen in other curricula which typically have five areas. The birth to 12-month version contains 184 objectives arranged in logical teaching sequences in each area. This sequencing model focuses on how children should be taught, rather than the mean age at which nonhandicapped children learn a skill. The CCHI recognizes that some handicapped children may need to be taught adaptive skills which replace normal skills when necessary.

Each objective specifies the position of the child, materials, teaching procedures, and evaluation of performance. Special notes regarding specific handicapping conditions or cautions are included.

The gross motor sections were authored by a pediatric physical therapist and extensive drawings illustrate the text.

6.4 Children Move to Learn: A Guide to Planning Gross Motor Activities

Author:
Judy Kline
Available from:
Communication Skill Builders, Inc.
3130 North Dodge Boulevard
P.O. Box 42050-K
Tucson, Arizona 85733
(602) 327-6021
Date of Publication:
1977
Cost:
$4.95
Format:
Paperback, 44 pages
Description:

The manual covers head control, reaching and grasping, trunk control, sitting, early mobility, prewalking, and walking. There is some reference to vision, hearing, muscle tone, and alertness. Suggestions are made for observing gross motor development, detecting delays, and implementing corrections. Reproducible 8½" x 11" forms for assessing, recording progress, and planning individual activities are included.

6.5 A Clinical and Educational Manual for Use with the Uzgiris and Hunt Scales of Infant Psychological Development

Author:
Carl J. Dunst
Available from:
University Park Press
300 North Charles Street
Baltimore, Maryland 21201
(800) 638-7511
Date of Publication:
1980
Cost:
$12.95
Format:
Paperback, 128 pages (scoring sheets are available separately)
Description:

This manual is designed to be used with the Uzgiris and Hunt ordinal scales of psychological development to maximize the utility of those scales and aid in the design of intervention activities. The characteristics of ordinal scales are presented and compared to psychometric infant tests. A brief review of the literature illustrates the applicability of ordinal scales to handicapped populations (developmental ages birth to two years).

The clinical-educational process described includes quantitative performance assessment (estimated developmental ages), qualitative performance assessment, and subsequent psychoeducational intervention. Obtaining qualitative information is seen as the most important step in the clinical-educational process. Qualitative information includes: 1) the levels of development in each of the seven sensorimotor domains, 2) overall pattern of sensorimotor development, 3) whether the pattern is typical or atypical, 4) the extent to which deviations are present, and 5) the nature of these deviations. Record forms for operating the clinical-educational process are included (summary record form, profile of abilities form, and individual record forms for each of the seven scales).

The user of this manual should be thoroughly familiar with and trained in the administration of the Uzgiris and Hunt scales and Piagetian theory.

This document includes 53 experimental items which supplement the 73 scale steps of the Uzgiris and Hunt instrument. Instructions for administering these experimental items and using the recording forms are provided. Eleven case studies which illustrate the intervention model are presented.

6.6 COMP Curriculum and COMP Curriculum Guide

Author:
Sara J. Forsberg
John T. Neisworth
Karen W. Laub

Available from:
Division of Special Education and Communication Disorders
Moore Building
Pennsylvania State University
University Park, Pennsylvania 16802
(814) 865-6072

Date of Publication:
1977

Cost:
$10 each

Format:
Spiral-bound paperback, 110 pages and 120 pages (respectively)

Description:
The *COMP Curriculum* and the *Guide*, developed at the HICOMP Project at Pennsylvania State University, are a two-volume set. Included in the *COMP Curriculum* are approximately 800 developmentally sequenced objectives in communication or language, own-care or self-help and social skills, gross and fine motor, and problem-solving or cognitive. The objectives in each area cover the developmental range from birth to age five.

The *COMP Curriculum Guide* describes the curriculum and how to use it. Instructions are given in the use of teaching strategies, evaluation methods, and consequation techniques. The *Guide* provides cross-references to objectives duplicated in the curriculum. Samples of data recording sheets are included. A section of the *Guide* discusses how to link developmental assessment to curriculum.

The curriculum is presented in the Appendix of *Individualized Education for Preschool Exceptional Children*, by Neisworth et al, published by Aspen Systems (800/638-4047; in Maryland, 301/428-0700). This 312-page, hardcover book costs $22.95.

6.7 Contingency Intervention Curriculum

Author:
Michael Lewis
Richard Brinker

Available from:
Institute for the Study of Exceptional Children
Educational Testing Service
Rosedale Road
Princeton, New Jersey 08541
(609)921-9000

Date of Publication:
1981

Cost:
Not available

Format:
Software computer programs

Description:
The *Contingency Intervention Curriculum* is a computerized infancy learning curriculum. It is designed to meet the needs of motor handicapped and developmentally delayed infants who frequently lack the ability to engage the environment to learn response-consequence relationships (see Chapter 4 of this book).

The contingency intervention system consists of four components:

- *Playspace* is an infant seat or other type of support in front of a frame with mounted foot panel, levers, speakers, rear projection screen, and various mechanical toys;
- *Input devices* are switch closures which respond to child behaviors such as grasping, head-raising, arm movement, kicking, pulling,

and wrist rotation; simple button boxes for recording frequency and duration of a variety of behaviors by observers (smiling, crying, vocalization, and attention);

- *Output devices* provide consequences, such as: cassette tape recorders, slide projectors, vibrating pads, fans, lights, drawing of a face, and common battery-operated toys;
- *Apple II Microcomputer* with floppy disks present stimuli and store the child's responses; computer, disk drive, and circuitry are portable and fit into a suitcase; control and analysis programs are available.

Immediate analysis of performance data and the demonstration of the infant's capabilities to the parent increases parental expectations and social contingencies.

6.8 Curriculum and Monitoring System *(CAMS)*

Author:
Glendon Casto, Ed.,
Staff of the Multi-Agency Project for Preschoolers
Available from:
Walker Educational Book Corporation
720 Fifth Avenue
New York, New York 10019
(212) 265-3632
Date of Publication:
1977
Cost:
Six manuals: $77.50
Cassette-filmstrip: $39.50
Format:
Five paperback manuals and one spiral-bound set of cards; 102, 48, 80, 192, 180, and 120 pages
Description:

CAMS consists of curricular programs in five areas: receptive language, expressive language, motor development, self-help, and social-emotional. Placement tests and photographs depicting various skills are included in the training manual. Individual manuals for each curricular area contain placement tests and curricula. Each objective is presented in step statements, with each having a teaching procedure, trial criterion, and step criterion.

Receptive language skills include identifying objects, following commands, touching body parts. Expressive language includes sounds and syntax taught through imitative procedures. The motor program includes gross and fine motor skills in the birth to five developmental range (not intended for motor-impaired children). Self-help skills involve feeding, dressing, personal hygiene, and toileting. The social-emotional program begins with teaching a child to respond to a person and includes more advanced social behaviors such as handling frustration and exhibiting self-control.

6.9 Curriculum Guide: Hearing-Impaired Children Birth to Three Years and their Parents

Author:
Winifred H. Northcott
Available from:
Alexander Graham Bell Association for the Deaf
3417 Volta Place, N.W.
Washington, DC 20007
(202) 337-5220
Date of Publication:
1977
Cost:
$9.50
Format:
Paperback, 291 pages
Description:

This document describes a comprehensive program for hearing-impaired infants and their parents. The primary focus is on a home-centered, parent-guided, natural language approach. Program organization and forms used by the JDRP-validated project upon which this book is based are included. Neurological, cognitive, and language attainment for normal development are described for the birth to 16-week, 20-week, 6-month, 8- to 12-month, and 12- to 18-month age range. Attainments for those areas of development (plus social) are given for 18, 24, 30, and 36 months. At each age range, teacher goals for parents, suggested daily activities for parents, and sample phrases are provided.

6.10 DEBT Diaper Dudes

Author:
DEBT Project Staff
Gloria Galey, Director
Available from:
DEBT Project

1628 19th Street
Lubbock, Texas 79401
(806) 747-2641 (ext. 455)

Date:
1976

Cost:
$6

Format:
Paperback, 25 pages

Description:
DEBT Diaper Dudes describes how to set up a system for motor learning. Motor development learning objectives, activities, and materials appropriate for a gymnasium, dressing room, and swimming pool are provided. Activities are arranged developmentally for infants to age three, however, age levels are not assigned to the activities. A correlated skill sequence analysis is under development.

A related product, *Teaching Activities Packet Birth to 36 Months*, is also available from the project.

6.11 Developmental Physical Management Techniques for the Multidisabled Child

Author:
Beverly Buttram
Glenna Brown

Available from:
Book Request
The University of Alabama
Area of Special Education
P.O. Box 2592
University, Alabama 35486
(205) 348-7340

Date of Publication:
1977

Cost:
$5

Format:
Paperback, 70 pages

Description:
This manual of handling and therapeutic techniques was intended for use by therapists and teachers under close supervision of therapists. Based on the works of Rood, the Bobaths, Randolph, Corley, and Ayres, the activities include those intended to normalize muscle tone, integrate basic reflexes, facilitate desired muscle groups, facilitate co-contraction, and develop equilibrium.

The activities and equipment presented include statements of purpose, characteristics of target children, instructions for administration, goal of the activity, and cautions.

6.12 Developmental Play as a Learning Tool— Birth to Three Years (Curriculum Guide for Infant-Toddler Educational Program)

Author:
Kyong Lischner
Nina Spotts
Margaret Young

Available from:
Bozorth Early Childhood Center
Glassboro State College
Glassboro, New Jersey 08028
(609) 445-6285

Date of Publication:
1975

Cost:
$3

Format:
Paperback, 100 pages

Description:
Developmental Play is organized around child behaviors which typically emerge in the following "phases": birth to 3 months—"It's you and me, Mom"; 3 to 6 months—"I'm all hands, eyes, and mouth"; 6 to 12 months—"What would happen if I...poke it... pull it...drop it..."; 12 to 18 months—"Things sure look different up here"; 18 to 24 months—"I am ME, you are you"; 24 to 36 months—"I can do it all by myself."

The emerging behaviors are listed for each phase.

Suggestions for activities appropriate for each phase are presented for the following topics: routine care, snack time, cooking, sounds, movement, pictures and books, manipulative toys, imitative play, mirrors, art, water play, sand and dirt play, ball and bean bag play, block play, push-pull toys, pets, outdoor play, field trips.

Caregivers' responses to each of the developmental phases are described in a separate section.

The appendices contain: a sample schedule for a half-day program, recipes suitable for cooking participation by young children, and references.

6.13 Developmental Programming for Infants and Young Children

Author:
D. Sue Schafer, Ed.
Martha S. Moersch, Ed.
Available from:
The University of Michigan Press
Department YB
P.O. Box 1104
Ann Arbor, Michigan 48106
(313) 764-4394
Date of Publication:
1981
Cost:
Volume 1: $7
Volume 2: $1.25 (minimum of five)
Volume 3: $8
Volumes 1-3: $14.50 set
Format:
Paperback
Description:

Developmental Programming consists of three volumes. Volume I is *Assessment and Application*. Volume 2 is the *Early Intervention Developmental Profile*, the assessment instrument for determining appropriate placement, one per child. The set was designed to be used by multidisciplinary teams who have combined skills in motor, language, and cognitive development, and who consider parents part of the intervention team. Developed at the University of Michigan's Institute for the Study of Mental Retardation and Related Disabilities (ISMRRD), the volumes enable the teacher/therapist to program for children functioning in the birth to 36-month developmental age range.

Stimulation Activities, Volume 3, is meant to be delivered by the parent to handle, stimulate, and interact with their child through natural play activities and daily care. This is a supplement to specific therapies offered by professionals. *Stimulation Activities* is arranged to correspond to the developmental age ranges of the *Profile*. Each age range consists of short-term goals and activities for achieving each goal.

Cautions are provided for activities not appropriate for certain handicaps, such as motor impairment. Adaptations for visual, hearing, and motor impairments are given.

The areas of development addressed and subdivisions are: Perceptual/fine motor (based in reflexive and developmental theory)—grasp and release, visual motor, bimanual coordination; Cognition (follows Piaget's framework)—sensorimotor period and preoperational (matching, numerosity, causality, sorting, visual, and auditory memory); Language (behavioral and linguistically based)—imitation, reception, expression; Social/emotional (based on attachment-separation theory)—attachment and separation, independence, play, and self-image; Self-Care-Feeding (based on reflexive development)—dressing, toileting, hygiene (based on behavioral theory); Gross motor (based on reflexive development as a precursor to development of mature motor patterns)—head and trunk control, reflex integration, locomotion and balance.

6.14 The Developmental Resource, Behavioral Sequences for Assessment and Program Planning

Author:
Marilyn A. Cohen
Pamela Gross
Available from:
Grune and Stratton
111 Fifth Avenue
New York, New York 10003
(212) 741-6800
Date of Publication:
1979 (Volumes 1 and 2)
Cost:
Volume 1: $19.95
Volume 2: $20.95
Format:
Hardback, 224 and 256 pages (respectively)
Description:

The *Developmental Resource* is an expansion of *Developmental Pinpoints*. These volumes have expanded that instrument to include task-analyzed, functionally sequenced objectives for teaching young handicapped children. Behavioral pinpoints were derived from extensive research and major assessment tools for children birth to age six.

Curricular areas include: sensorimotor, early cognitive, gross and fine motor, language, later cognitive or preacademic, social, self-help/adaptive living skills, creative activities, response to reinforcement.

Each chapter (curricular area) contains three major components: 1) an introductory overview of literature on development in that area; 2) behavioral sequences in that domain with assessment suggestions and samples of data collection formats; and 3) application directions for transferring the assessment information to classroom teaching and specific instructional strategies.

6.15 Developmental Sequence Performance Inventory and Infant Learning Program

Author:
Val Dmitriev
Patricia Oelwein
Staff
Available from:
Model Preschool Center for Handicapped Children
EEU WJ-10
CDMRC
University of Washington
Seattle, Washington 98195
(206) 543-4011
Date of Publication:
1980
Cost:
DSPI: $3
Infant Learning Program: $1.25
Format:
Photocopy
Description:

The DSPI is the assessment tool used for assessing major skill areas and determining individual programs for Down's syndrome children birth through primary grades at the University of Washington's JDRP-approved Down's Syndrome Program. The skill areas assessed are divided into 12- to 18-month intervals.

The Infant Learning Program is a series of papers. The titles are: 1) "Infant Learning," by Val Dmitriev (Exercises 3 to 6 months, Looking and Listening—First Steps to Learning, Techniques for Teaching Early Eye-Hand Coordination, Eyes and Hands Work Together, Importance and Imitation); "Procedures for Training Parents in the Infant Learning Program," by Patricia Oelwein; "Training Parents in How to Reduce Tongue Protrusion in Down's Syndrome Children"; "Infant Assessment Instruments"; List of Available Publications on Down's Syndrome.

6.16 Developmental Therapy for Young Children with Autistic Characteristics

Author:
Ann W. Bachrach
Ada R. Mosley
Faye L. Swindle
Mary M. Wood
Available from:
University Park Press
300 North Charles Street
Baltimore, Maryland 21201
(800) 638-7511
Date of Publication:
1978
Cost:
$18.50
Format:
Paperack, 200 pages
Description:

This book is an expansion of Wood's *Developmental Therapy* specifically for children in Stage One of therapy, "responding to the environment with pleasure." It is particularly appropriate to the needs of children from birth to three with autistic characteristics.

This is a methods book for teachers and parents including: samples of techniques and materials, routines and environments, activity periods, learning experiences, and home programs. Step-by-step guidelines for the use of the program, curriculum objectives, and lesson plans are included.

6.17 The EMI Curriculum Pool Materials

Author:
Wanda B. Elder
Available from:
Education for Multihandicapped Infants Program
Box 232
University of Virginia Medical Center
Charlottesville, Virginia 22908
(804) 924-5161
Date of Publication:
1977
Cost:
$5.25
Format:
Three-ring binder, 350 pages
Description:

The *Curriculum Pool* consists of 360 behaviors typically acquired between birth and 24 months. Five major sections (gross motor, fine motor, social, cognitive, and language) each contain approximately 70 behavioral items, about three for each month. Many reflexive or unteachable behavioral attainments included in the EMI Assessment Scale were eliminated from the pool.

Each section contains an introductory review of development in that area. Individual behaviors are

organized one per page and include: the assessment behavior, definition, rationale, criterion, and sample instructional activities. Behaviors which appear in more than one developmental area are cross-referenced.

Related materials include the *EMI Infant Learning Packets*, 15 file folders to be used to teach parents of high-risk infants birth to 12 months about normal development. The Learning Packets contain suggested developmentally appropriate activities for infants.

6.18 Facilitating Children's Development— A Systematic Guide for Open Learning, Volume I: Infant and Toddler Learning Episodes

Author:
John M. Meier,
Paula J. Malone

Available from:
University Park Press
300 North Charles Street
Baltimore, Maryland 21201
(800) 638-7511

Date of Publication:
1979

Cost:
$22.95

Format:
Paperback, 332 pages

Description:

Facilitating Children's Development: A Systematic Guide for Open Learning is a developmentally sequenced organization of learning episodes which views the child as an active learner and the teacher as a learning facilitator. *Individual Learning Episodes* include statements of entry behaviors which are prerequisites for the episode and terminal behaviors which indicate achievement of the objective of the episode.

Infant Learning Episodes is appropriate for developmental ages birth to 18 months. *Toddler Learning Episodes* is designed for developmental ages 18 months to three years.

Learning Episodes consists of: purpose or objective, description of entry behaviors, materials and procedures, terminal behavior (identical to performance criterion or objective of IEP).

Learning Episodes is based on an information processing model in which steps to learning are represented by three major categories: Input—the sensory/*receptive* domain; Operations—the *cognitive*/affective/attitudinal domain; Output—the motor/*expressive*/social domain.

The curriculum stresses that the learning facilitator be "response-able" for observing the child's responses and taking advantage of them by reinforcing and expanding the behavioral repertoire. Suggestions are given for using daily routines for learning episodes.

Sample forms are included for progress recording and IEP development. The 117 Infant and 99 Toddler Learning Episodes are organized as follows: *Sensory*—hearing, seeing, touching, sensory integration; *Cognitive/Affective*—process (spatial, object performance, cause and effect), content (classification, seriation, generalization), self-image, creativity, emotional development (fear of the dark), role playing, emotional development (family identity); and *Motor/Expressive/Social*—gross motor, fine motor, language, socialization and imitation, self-help, social cooperation (cooking), cultural sharing (cooking), cultural sharing (festivals), readiness.

Readiness episodes include those which are typically categorized as gross motor, oral motor, fine motor, and self-help. Because of their importance in proper positioning or movement in performing the other episodes, they are classified as "readiness." The authors say these episodes are appropriate for children with "interferences in their development."

A companion volume, *Interferences with Development* (Malone & Meier, 1979) is available, as is Volume II, *Learning Episodes for Older Preschool Children*. Both are published by University Park Press.

6.19 From the Beginning: The EMI-ART High-Risk Nursery Intervention Manual

Author:
EMI staff

Available from:
Education for Multihandicapped Infants Program (EMI)
Box 232
University of Virginia Medical Center
Charlottesville, Virginia 22908
(814) 924-5161

Date of Publication:
1978
Cost:
$5.25
Format:
Photocopy, 140 pages
Description:
The *High-Risk Manual* is the description of an intervention model in a neonatal intensive care unit. Guidelines are given as to activities appropriate for both pre- and postterm infants contingent upon medical condition and wake/sleep cycles.

Pre-term activities are listed for seven hospital environments (CPAP, respirator, isolette, double wall isolette, oxyhood, phototherapy, crib); and four sensory modalities (kinesthetic, tactile, auditory, visual).

Postterm activities correspond to the activities of the first four months in the curriculum pool.

Additional information on educational/hospital staff coordination, additional reading, parent concerns, and neurological screening is included.

6.20 Good Beginnings

Author:
Judith Evans *et al*
Available from:
HiScope Press
600 North River
Ypsilanti, Michigan 48197
(313) 485-2000
Date of Publication:
In press
Cost:
$10 (approx.)
Format:
Paperback, 150 to 200 pages
Description:
Good Beginnings is an adaptation for infants of the *HiScope Cognitively Oriented Curriculum*, currently published as *Young Children in Action*. It is an infant curriculum based on the sensorimotor period of development described by Piaget. It is designed to be used by parents and caregivers. A related filmstrip, *Your Baby's Day*, also is available from HiScope.

6.21 GUIDE: A Developmental Skills Attainment System (formerly, *Vision Up*)

Author:
Noel B. Croft
Available from:
Educational Products and Training Foundation
P.O. Box 4128
Boise, Idaho 83704
or Noel Croft
P.O. Box 610
Paul, Idaho 83347
Cost:
$145 prepaid, $160 postpaid;
components available separately
Format:
Assessment card sort; profile sheets and initial assessment questionnaires; handbook
Description:
The 960 program cards are organized into six developmental areas: intellectual, fine motor, language, physical, social/personal, and self-help skills.

Assessment is accomplished by the parent sorting 230 skill cards into "can do," "can't do," and "don't know" piles. The information is then incorporated in the Profile Sheet, and training objectives are identified. A program card for each skill includes a description of the skill, programming steps, and materials required. The *GUIDE* was developed by a project serving visually impaired children, but it is comprehensive in scope and appropriate for the developmental range birth to 72 months.

6.22 Guide to Early Developmental Training

Author:
Wabash Center for the Mentally Retarded, Inc.
Available from:
Allyn and Bacon
College Division
470 Atlantic Avenue
Boston, Massachusetts 02210
(617) 482-9220
Date of Publication:
1977
Cost:
$28.95

Format:
Three-ring binder, 516 pages
Description:
This curriculum contains goals for the moderately and severely retarded. Cognitive goals are based on a Piagetian model. Developmental checklists and activities are provided for: motor/perceptual motor, cognitive, language, self-care, number concepts. The activities are appropriate for group or individual instruction.

6.23 Handling the Young Cerebral Palsied Child in the Home

Author:
Nancie R. Finnie
Available from:
E. P. Dutton and Company
201 Park Avenue South
New York, New York 10017
(212) 725-1818
Date of Publication:
1975 (2nd edition)
Cost:
$4.95
Format:
Paperback, 337 pages
Description:
This book—while not a curriculum, as such—is a classic reference for programming for motor-impaired infants. Over 400 drawings illustrate the proper handling and positioning of children in activities such as bathing, toileting, dressing, feeding, and play. The book includes explanations of normal motor development, references for parents, and a list of suppliers for equipment and accessories.

Note: A Spanish-language edition is available from La Prensa Medica Mexicana, Paseo de las Facultades 26; Copilco-Universidad, Mexico, 20, D. F. (Apartado Postal 20-413); $5.80 U.S.

6.24 Hawaii Early Learning Profile (HELP) and HELP Activity Guide

Author:
Setsu Furuno
Carol Hosaka
Barbara Zeisloft
Katherine O'Reilly
Takayo Inatsuka
Toney Allman
Available from:
VORT Corporation
P.O. Box 11552K
Palo Alto, California 94306
(415) 965-4000
Date of Publication:
1979
Cost:
HELP Charts: $2.95 (per set of three); $1.95 (10 or more sets)
Activity Guide: $14.95 (one to nine); $11.95 (10 or more)
Format:
Paperback, 230 pages
Description:
HELP covers these developmental areas: cognitive/intellectual, expressive language, gross motor, fine motor, social-emotional, and self-help.

Age ranges are given on large charts for each of 600 skills normally acquired between birth and three years. The *HELP Activity Guide* contains over 2,000 activities for encouraging the development of the skills. In some cases, skill items are not to be taught, rather, they are included as developmental markers, such as "may awaken, crying from dreams." Following assessment, the teacher selects unattained skills for writing objectives and determines appropriate tasks from the activities for that skill in the guide.

The authors recommend that home activities be incorporated into daily family routines. It also is suggested each child have a set of charts to record progress.

6.25 Infant ABECEDARY Program

Author:
Frieda K. Spivak
Available from:
Helping Children Handbooks Collection, Inc.
1 Terrace Drive
Great Neck, New York 11021
Date of Publication:
1979
Cost:
Components and costs listed below
Format:
Paperback (number of pages varies)

Description:

The *Infant ABECEDARY Program* consists of the *Assessment of Basic Capabilities—ABC*, ($8), *Curriculum for Developmental Education—CDE* ($20), *Educator and Family Guide Cards*—EFG ($20), and four *Educator and Family Handbooks* ($65 for the set, $20 each) which cover these assessment and curriculum areas: movement/coordination, social/emotional adaptive development, sense perception/cognitive development, and communication/conceptual development.

The *ABC* is a norm-referenced assessment scale of 192 items. The items are arranged in three-month increments. Each age level has four items in each area. From the results of the *ABC*, targets, goals, and objectives for the IEP are determined. The *CDE* and the *Handbooks* provide a collection of master lesson plans appropriate to age levels and handicapping conditions.

See also *The Manual for the Development and Implementation of Personalized Learning Plans* (this bibliography, 6.38).

6.26 Infant Learning: A Cognitive-Linguistic Intervention Strategy

Author:
Carl J. Dunst

Available from:
Teaching Resources
50 Pond Park Road
Hingham, Maine 02043
(800) 225-5406

Date of Publication:
1981

Cost:
$19.95

Format:
Paperback

Description:

This curriculum focuses on "... the facilitation of cognitive behaviors indicative of the symbolic function (the ability to differentiate between signifiers and the signified...)." The model described consists of three major components: *Phases* correspond to secondary circular reactions, differentiated sensorimotor behaviors, and representational behaviors; *types* of sensorimotor abilities include the range, content, and topography of psychological and psychosocial cognitive-linguistic behaviors; the *context* of intervention refers to a continuum of occasions on which a skill is taught. Teaching the concept "cup" at mealtime would be contextual intervention. Teaching the child to select the cup from a pair of objects at a time other than mealtime would be noncontextual intervention.

Dunst describes his model as an ecological approach to intervention; that is, behaviors are developed "within the context and settings in which they are of utility."

6.27 Infant Stimulation Curriculum

Author:
Jean Berkwitt
Cheryl Ganch
Pat Storm
Gail Meddaugh

Available from:
The Nisonger Center Publications Department
1580 Cannon Drive
Columbus, Ohio 43210
(614) 422-0825

Date of Publication:
1978 (second revision)

Cost:
$11.50 ($1.25 postage)
Assessment manual: $3

Format:
Card file, 334 pages

Description:

The *Infant Stimulation Curriculum* contains 334 behaviors normally attained between birth and three years. The items are sequenced into eight developmental stages within each of six curricular areas: coordination, locomotion, cognition, receptive language, expressive language, and socialization.

Each card contains a *Behavior Statement* and *Activities*, but does not indicate age approximations. *Activities* (some are illustrated) are suggestions for encouraging the demonstration of behaviors. The *Behavior Statements* describe normal developmental attainments between birth and age three years. The authors recommend some general strategies for adapting the curriculum to handicapped infants.

6.28 Infant/Toddler: Introducing Your Child to the Joy of Learning

Author:
Earladeen Badger
Available from:
Instructo/McGraw-Hill
18 Great Valley Parkway
Malvern, Pennsylvania 19355
(215) 644-7700
Date of Publication:
1981 (revised edition)
Cost:
$8.95
Format:
Paperback, 144 pages
Description:
This revised edition combines the *Infant/Toddler Learning Program Mother's Guide to Early Learning*. The 21 infant and toddler units, provide activities, instructional ideas and toy suggestions appropriate for children birth to 36 months.

The infant units cover: bonding, visual attention, early eye-hand coordination, early cognition, interest in objects, simple motor skills, letting go, socializing and imitative behavior, refining target experiences, taking apart, and putting together.

The toddler units consist of: stringing and lacing, fitting holes and shapes, fitting parts to form a whole, seriation, matching, sorting, fine motor control, patterning, early classification, and early number concepts, one and more than one.

Appendices include a developmental profile chart and a list of manufacturers and toys suppliers.

6.29 Project KIDS Curriculum Package

Author:
Project KIDS Staff
Available from:
Project KIDS
3801 Herschel Street
Dallas, Texas 75219
(214) 526-0999
Date of Publication:
1976
Cost:
$10.25 (plus postage)
Format:
Pocket folder, 320 activity cards (78 pages)
Description:
Project KIDS has cross-referenced objectives from several existing curricula (MEMPHIS, The GUIDE, RADEA, NISONGER, PORTAGE, STEP by STEP) to produce a comprehensive curriculum for birth to age-five developmental ages. The package includes samples of mini-activity plans, a classroom management system, and a sample classroom organization chart. The activities correspond to the KIDS Inventory of Development for planning instruction.

6.30 Koontz Child Developmental Program: Training Activities for the First 48 Months

Author:
Charles Koontz
Available from:
Western Psychological Services
Order Department
12031 Wilshire Blvd.
Los Angeles, California 90005
(213) 473-2061
Date of Publication:
1974
Cost:
Book: $17.70
Kit (book and record forms): $21.60
(8 percent shipping)
Description:
The *Koontz Child Developmental Program* consists of an evaluation and remedial activities in gross and fine motor, social, and language. Activities are provided for the 1- to 48-month range in each of the areas.

6.31 Language Stimulation Curriculum File

Author:
Barbara Zeisloft
Available from:
Comprehensive Training Program for
Infant and Young Cerebral Palsied Children
Demmer-Kiwanis Children's Division

6.1

Curative Workshop of Milwaukee
9001 W. Watertown Plank Road
Wauwatosa, Wisconsin 53226
(414) 260-1414

Date of Publication:
Under revision

Cost:
Not available

Format:
Under revision

Description:
This curriculum is available for use only by replication site participants or individuals who have completed the eight-week Neurodevelopmental Treatment Course. A variety of related print and audiovisual materials are available from this JDRP-validated project. For further information and a materials list, contact the project at the address above. See also *Program Guidelines for Children with Feeding Problems* (this bibliography, 6.41).

6.32 Learningames for the First Three Years: A Program for a Center/Home Partnership

Author:
Joseph Sparling
Isabelle Lewis

Available from:
Walker Educational Book Corporation
720 Fifth Avenue
New York, New York 10019
(212) 265-3632

Date of Publication:
1981

Cost:
$17.50

Format:
Kit for professional use (four-ring notebook, user's guide, charts)

Other editions:
From Walker:
Hardcover—$12.95; spiral-bound—$14.50; 226 pages; 180 photos.
From Berkley Books:
Paperback—$2.95.

Description:
Learningames consists of 100 6" x 9" cards with photos and instructions for the games. Directions, variations, and skills the game will develop are on the reverse side. The games are divided into six-month age spans. Themes addressed by each game include: social/emotional (needs and feelings), self-image, independence, sharing, family, subculture, and intellectual/creative (language, knowing and classifying, creativity, object permanence, visual-motor).

Three 17" x 22" development posters depict in photographs child development in each of the three years and illustrate the program's scope and sequence.

The user's guide includes the following chapters: group-care environment, program materials, parent communications, plans and records, individualizing with special children, child development, reading to young children.

Progress charts for record-keeping are also provided.

Materials for parents include take-home sheets in reproducible 8½" x 22" format which suggests games to play at home. Parent goal cards are a precursor to individualized learning plans.

6.33 Macomb 0-3 Regional Project Core Curriculum

Author:
Patti Hutinger, staff

Available from:
Macomb 0-3 Regional Project
27 Horrabin Hall
Macomb, Illinois 61455
(309) 298-1634

Date of Publication:
1980 (field-test edition)

Cost:
Not available

Format:
Under revision

Description:
The *Core Curriculum* blends four theoretical/data bases: child growth and development, Piagetian cognitive developmental principles, language development, therapy techniques for specific handicapping conditions. Curricular areas include: cognitive, language, self-help, gross and fine motor, social and sensory. Developmentally sequenced goals, behavior descriptions, and suggested activities for eliciting or developing the behaviors are included. Adaptations for specific handicapping conditions are provided. The Core Curriculum items are cross-referenced to the *Receptive-Expressive Emergent Language Scale* and the *Alpern-Boll Developmental Profile*. The functional sequencing of

the curriculum makes it compatible with the *CAPE Adaptive Performance Evaluation* instrument.

6.34 Neurorehabilitation: A Multisensory Approach

Author:
Shereen Farber
Available from:
W. B. Saunders
West Washington Square
P.O. Box 416
Philadelphia, Pennsylvania 19105
(205) 574-4700
Date of Publication:
1982
Cost:
Not available
Format:
Under revision
Description:
This book, intended for occupational or physical therapists, is the commercially published version of *Sensorimotor Evaluation and Treatment Procedures for Allied Health Personnel*. The earlier version contained chapters on neurophysiological rationale, evaluation, treatment, perceptual motor dysfunction, adaptive equipment, and sensorimotor evaluation and treatment, including feeding, for high-risk newborns.

6.35 Parent-Infant Communication: A Program of Clinical and Home Training for Parents and Hearing Impaired Infants

Author:
Valerie Sitnick
Nancy Rushmer
Roberta Arpan
Available from:
Dormac, Inc.
P.O. Box 752
Beaverton, Orgeon 97005
(503) 641-3128
Date of Publication:
1977
Cost:
$19.95
Format:
Three-ring binder, 228 pages
Description:
Parent-Infant Communication consists of a child curriculum which focuses on the development of communication skills and a parent curriculum which focuses on hearing impairment. The materials are appropriate for either an auditory-oral approach or a total communication approach.

The child curriculum consists of 178 objectives (144 activities) covering auditory perception, receptive language, and expressive language. The parent curriculum consists of 100 objectives covering the development of auditory perception, receptive language, expressive language, and total communication (optional). Reproducible handouts are provided, and programmed learning materials are used. The sign language unit for parents teaches a 440-word vocabulary in 15 lessons. Sample forms for recording child and parent progress are included.

6.36 Peabody Developmental Scales and Programmed Activities

Author:
Rhonda Folio
Rebecca (DuBose) Fewell
Available from:
Experimental Education Unit, WJ-10
CDMRC
University of Washington
Seattle, Washington 98195
(206) 543-4011
Date of Publication:
1974 (revised edition)
Cost:
$3 (approx. reproduction costs)
Format:
Photocopy
Description:
Formerly available from IMRID Publications at George Peabody College, the *Scales* are now available from the authors for field-test and research purposes. Commercial publication of the standardized version is expected. The series of gross- and fine-motor behaviors typically acquired from birth to seven years are accompanied by activities to be used in promoting their development.

6.37 The Perceptual Motor Play Program: Social Learning Curriculum for the Developmentally Delayed

Author:
Herb Goldstein
Mark Alter
Available from:
Melton Peninsula
1949 Stemmons Freeway
Dallas, Texas 75207
(800) 527-7830
Date of Publication:
1981
Cost:
$295; components available separately
Format:
Three kits
Description:

The Perceptual Motor Play Program consists of two phases. Phase I, exploratory play, is further subdivided into sensory orientation and fine- and gross-motor exploration. Illustrations and content for the latter were provided by a pediatric psychiatrist and a physical therapist. Phase II, social play, includes parallel, cooperative, collaborative, and competitive play. Phase II also includes an activity bank of 96 laminated task cards.

Two other books are included: *How to Implement* and *How to Create Materials.*

The *Perceptual Motor Play Program* is one of three components of the *Social Learning Curriculum.* The other two programs scheduled are the *Sensory Awareness Program* (early visual, taste, smell, tactile, auditory-receptive, and proprioceptive experiences) and the *Gross-Motor Program* (heads up, sit about, move around).

6.38 The Manual for the Development and Implementation of Personalized Learning Plans

Author:
Shirley Zeitlin
Frieda Spivack
Available from:
Kingsbrook Jewish Medical Center
DMRI-34
Rutland Road and East 49th Street
Brooklyn, New York 11203
(212) 756-9700 (ext. 2284)
Date of Publication:
1981
Cost:
Not available
Format:
Under revision
Description:

The manual describes the interaction model for Personalized Learning, which combines a developmental task learning approach with targeting goals for improving adaptive behavior. Decision questions provide structure for using the manual.

The *Assessment of Basic Capabilities* (see Infant ABECEDARY Program, 6.25) is used for determining developmental tasks. Zeitlin's (1981) *Early Adaptive Behavior Inventory* or *The Coping Inventory* (Zeithlin, 1978) is used to assess the behaviors and skills a child uses to meet his own needs and to adapt to environmental demands. Coping competence includes resources, vulnerabilities, and general coping style. A total of 48 behaviors derived from the coping, temperament, competence, cognitive, and moral development literature are assessed with the Coping Inventory, appropriate for 12 months developmental level and beyond.

The more recent adaptation, *The Early Adaptive Behavior Inventory* (EABI), fills the gap between the *Brazelton Neonatal Behavioral Assessment* and *The Coping Inventory.* EABI is appropriate for the first 12 months of development and includes three categories of behaviors: self-regulatory, reactive (including feeding), and proactive (including self-stimulatory and interactive.)

6.39 Portage Guide to Early Education (Revised Edition)

Author:
Susan Bluma
Marsha Shearer
Susie Frohman
Judy Hillard
Available from:
The Portage Project
Cooperative Educational Service Agency #12
412 East Slifer Street
Box 564
Portage, Wisconsin 53901
(608) 742-5342
Date of Publication:
1976

Cost:
$32
Format:
Kit
Description:

The *Portage Guide to Early Education* includes three components: 1) checklist of behaviors—580 behaviors from standardized tests, developmentally sequenced, and organized into six areas (infant stimulation, socialization, self-help, language, cognition, and motor); 2) card file—580 cards in a vinyl carrying case, color-coded to match the checklist with suggestions for teaching; 3) Manual—describes how to use the guide, develop curriculum goals, and implement the curriculum.

The infant stimulation component contains 45 of the 580 behaviors and covers the birth to four-month developmental period. The cards include environment-enriching behaviors for parent or educator and items which require an undifferentiated or specific response from the child.

The remaining cards are arranged in developmental sequence by curriculum area and identified by year (birth to 1, 1 to 2, etc.). A number of related materials are available, including the *Portage Parent Program, Guide to Home Teaching,* and *Parent's Guide to Early Education* (special edition of the *Portage Guide* for *Parents*). A Spanish-language version is available.

6.40 Program Guide for Infants and Toddlers with Neuromotor and Other Developmental Disabilities

Author:
Frances P. Connor
G. Gordon Williamso..
John M. Siepp
Available from:
Teachers College Press
Columbia University
1234 Amsterdam Avenue
New York, New York 10027
(212) 678-3991
Date of Publication:
1978
Cost:
$12.95
Format:
Paperback, 415 pages
Description:

This document is a thorough description of the United Cerebral Palsy National Collaborative Infant Project. It is the single most comprehensive book regarding intervention for very young handicapped children. The Program Foundations section includes operational assumptions, considerations in assessment, and nutrition and health issues. The Developmental Program consists of atypical development and intervention in the following areas: movement, pre-speech, language, cognition, and social-emotional development. Sample intervention plans are presented which illustrate the transdisciplinary approach. A variety of service delivery models are presented and described. Appendices include examples of adaptive equipment and sources.

6.41 Program Guidelines for Children with Feeding Problems

Author:
Suzanne Evans Morris
Available from:
Childcraft Education Corporation
20 Kilmer Road
Edison, New Jersey 08817
(800) 631-5652
Date of Publicaton:
1977
Cost:
$5.95
Format:
Paperback, 48 pages
Description:

Program Guidelines presents techniques to deal with eleven feeding problems frequently seen in children with neurological and motor impairment. The eleven problems occur when the child:

- takes only strained foods and refuses to eat more solid foods;
- doesn't like to be touched and is hypersensitive around the face and mouth;
- gags frequently or vomits food;
- refuses to eat certain kinds of foods and may throw tantrums about eating;
- refuses to take liquids from a glass or cup;
- has poor control of jaw during eating and drinking (the jaw may thrust open too widely or lack control for finer movements needed in chewing);
- pushes food out of the mouth with the tongue;
- is not able to close the lips or use the lips to help remove food from the spoon;
- does not chew;
- drools profusely;

- becomes physically tight in the mouth and throat when eating (this makes it more difficult to suck, swallow, and chew efficiently).

The author recommends consultation with a therapist regarding individual feeding problems.

6.42 RISE Computerized Checklist and Curriculum

Author:
Loreta Holder
Available from:
The University of Alabama
Area of Special Education
P.O. Box 2592
University, Alabama 35986
(205) 348-7340
Date of Publication:
Under revision
Cost:
Not applicable
Format:
Under revision
Description:

This curriculum is being revised. The format is a checklist which is completed by teacher or therapist, computer-scored, and results in behaviors being targeted for intervention. Components include, but are not limited to: sensory-motor, oral-motor, reflexes to be integrated. Skills delineated in each component are appropriate for children birth to 72 months (approx.).

See also *Developmental Physical Management for the Multi-Disabled Child*, 6.11, also produced by the RISE project.

6.43 The SKI*HI Model: Programming for Hearing-Impaired Infants Through Amplification and Home Intervention

Author:
Thomas C. Clark
Susan Watkins
Available from:
Project SKI*HI Outreach
Department of Communication Disorders
UMC 10
Utah State University
Logan, Utah 84322
(801) 750-1369
Date of Publication:
1978 (third edition)
Cost:
$17
Format:
Three-ring binder, 420 pages
Description:

The manual contains a project description and the curriculum of Project SKI*HI. The contents include: administration, direct services to families, and supportive services. The *Home Intervention Curriculum* consists of:

- Home Hearing Aid Program—9 lessons for parents.
- Home Auditory Program—66 activities (and multiple variations) arranged by auditory levels; criteria for moving to a higher auditory level are included; auditory levels are: reflexive, alerting to sounds, locating sound sources, distance hearing, levels of hearing, gross environmental discrimination, gross vocal discrimination, and fine speech discrimination.
- Total Communication—56 lessons are presented on video cassette tapes; *instruction* lessons cover the manual alphabet, to-be verbs, pronouns, affixes, and question words; *activity* lessons parallel the language program; *subject* lessons cover food, color, time, etc.
- The Home Communication Program begins concurrently with the Hearing Aid Program and includes preassessment of parent-child interaction, teaching parents communication skills (six lessons are outlined), and post assessment of parent-child interaction.
- Home Language Program teaches parents to use parent dialogue, increased vocabulary frequency, reinforcement for child's use of language, naturalness, and language expansion. These language principles are discussed in reference to four natural learning situations: child care, parent task-oriented, child-oriented, and parent-directed activities.

Supportive services described in detail are: audiological services, hearing aid services, materials and equipment for parent and child, psychological support services, parent groups, and child development.

A complete listing of products and prices can be obtained from the above address.

6.44 Small Wonder (Level 1 and Level 2)

Author:
Merle B. Karnes
Available from:
American Guidance Service (AGS)
Publisher's Building
Circle Pines, Minnesota 55014
(800) 328-2560
Date of Publication:
1979, 1981
Cost:
Each complete program: $72.50
(components are available separately)
Format:
Kit: user's guide, activity cards, puppet, picture card stories, ideas
Description:
Each level of *Small Wonder* contains 150 activity cards. In level 1, they are grouped into three-month intervals. Based on descriptions of normal development, *Small Wonder* also makes suggestions to teachers and parents of physically handicapped or developmentally delayed children. Each 7" x 9" activity card includes a description of the activity, the skills involved, materials needed, and instructions. The activities were field-tested with nonhandicapped and handicapped children in homes and day care centers in eight (level 1) and 10 (level 2) states.

6.45 A Step-By-Step Learning Guide for Retarded Infants and Children

Author:
Vicki M. Johnson
Roberta A. Werner
Available from:
Syracuse University Press
1011 East Water Street
Syracuse, New York 13210
(315) 423-2596
Date of Publication:
1975
Cost:
$9.95
Format:
Paperback, 208 pages
Description:
This book illustrates and describes 240 task-analyzed skills which include toilet training, head control, grasping, speech, walking, and eating. Precise descriptions of teaching procedures are given. The curriculum is suitable for mildly retarded infants and young children who are severely retarded or multihandicapped.

A sequel, *A Step-By-Step Learning Guide for Older Retarded Children* (228 pages), contains 265 tasks including self-care, fine and gross motor skills, language, and perceptual skills. Behavior management is discussed. The guide is appropriate for retardation, emotional disturbance, and behavioral disorder.

6.46 The Teaching Research Curriculum for Moderately and Severely Handicapped (Language)

Author:
Staff of the Teaching Research Infant and Child Center
Available from:
Teaching Research Publications
Monmouth, Oregon 97361
(503) 838-1220 (ext. 401)
Date of Publication:
1980 (second edition)
Cost:
$15
Format:
Three-ring binder, 210 pages
Description:
This curriculum is based on the *Teaching Research Initial Expressive Language Program*. See the description for the *Teaching Research Curriculum (Self-Help and Cognitive* and *Gross and Fine Motor)* following this entry.

6.47 The Teaching Research Curriculum for Moderately and Severely Handicapped (Self-Help and Cognitive *and* Gross and Fine Motor)

Author:
H. D. Fredericks *et al*

Available from:
Charles C. Thomas
Bannerstone House
301-327 East Lawrence Avenue
Springfield, Illinois 62703
(217) 789-8980

Date of Publication:
1980 (second edition)

Cost:
$15.75 each

Format:
Self-Help and Cognitive: two volumes, paperback, 228 pages.
Gross and Fine Motor: paperback, 253 pages.
Supplemental wall charts ($3.50).

Description:
The Teaching Research Curriculum is comprised of developmentally sequenced task analyses of skills which nonhandicapped children typically acquire during their first six or seven years. The curriculum is packaged in three parts. The titles and curricular areas are:

- Gross and Fine Motor—language (receptive and expressive);
- Self-Help and Cognitive—self-feeding, dressing, personal hygiene, table skills, personal information, reading, writing, and number skills.

Each skill in each curricular area is presented in phases which represent a gradual withdrawal of assistance toward independent performance of the skill by the child. A phase may be broken down into steps which ease the acquisition of a skill (e.g., teaching putting on a sock with first a large sock, then a correctly sized one). A step may also designate duration of a behavior (e.g., kneeling for two, four . . . 120 seconds).

All three volumes contain placement tests and recommendations for determining where to begin instruction for individual children. Only the language section contains additional information useful in implementing all parts of the curriculum. A chapter on "Learning Theory" describes the basic principles used in instruction. "Designing and Implementing the Language Program" discusses training, generalization, data collection, and parent involvement. "Keeping Track of Students' Progress" explains how to make programming decisions. "The Remediation of Inappropriate Behaviors" is another chapter. An appendix of reproducible blank forms is included.

6.48 Teaching Your Down's Syndrome Child: A Guide for Parents

Author:
Marci J. Hanson

Available from:
University Park Press
300 North Charles Street
Baltimore, Maryland 21201
(800) 638-7511

Date of Publication:
1978

Cost:
$16.50

Format:
Paperback, 221 pages

Description:
This program of activities following normal developmental attainments during the first two years was intended primarily for parents of Down's syndrome infants. However, the guide also is useful to professionals.

The guide is based on programs tested at the Down's Syndrome Infant-Parent Program at the University of Oregon, and much of the book describes the effectiveness of that program. Many photographs enhance the optimistic character of the text. Chapters cover: observing and managing behavior, task analysis, teaching procedures, developmental milestones, and teaching programs. The curricular areas and components are:

- Gross Motor—head control, sitting, rolling, crawling, standing, walking, kicking and jumping, throwing;
- Fine Motor—visual (muscle coordination), reaching, grasping, object manipulation (I, II), problem solving;
- Communication-Speech and Language—early auditory, expressive language, receptive language;
- Social and Self-Help—social (self, others), feeding, dressing-toileting.

The developmental milestones graphically depict the range of ages at which the behaviors are normally attained. The corresponding teaching programs are arranged sequentially, but do not specify the age. Teaching programs include: developmental milestone (and objective), materials, teaching procedure, consequation, data collection, and additional comments. Data collection charts, a glossary, baby's record, and parent statements are included.

Appendices consist of information on types of Down's syndrome, other parent-infant programs, and examples of child profiles.

6.49 Total Baby Development

Author:
Jaroslav Koch
Available from:
Wyden Books
747 Third Avenue
New York, New York 10017
(212) 680-3030
Date of Publication:
1976
Cost:
$10.95
Format:
Hardback, 351 pages
Description:
The 333 exercises presented in this book are appropriate for developmental ages birth to 1 year. Though the exercises involve gross-motor activity, they attempt to develop physical, emotional, fine-motor, and cognitive growth. Four chapters present exercises grouped in three-month intervals. Many illustrations accompany the exercises. The intent of the exercises is to enhance development by presentation in a playful manner by parents.

6.50 Training Prerequisites to Verbal Behavior

Author:
Diane Bricker
Laura Dennison
Available from:
(In M. Snell, Ed. *Systematic Instruction of the Moderately and Severely Handicapped)*
Charles E. Merrill Publishing Company
Attention: Order Department
1300 Alum Creek Drive
Columbus, Ohio 43216
(614) 258-8441
Date of Publication:
1978
Cost:
$19.95
Format:
Chapter in book
Description:
This chapter describes a curriculum for language development based on the acquisition of cognitive behaviors which are the underprinnings of verbal behaviors. A review of the development of behavior during the early sensorimotor period and the normal pattern of language acquisition precedes the training procedures. The procedures described are targeted at infants and young children with developmental problems and older, more severely delayed children. Attention and on-task behavior are followed in the instructional sequence by vocalization, motor, and sound imitation. Discriminative use and appropriate use of objects are then taught as a prerequisite for word recognition. The distinguishing characteristic of this program is the focus on the concrete, physical environment before language, a representational system, is trained. Sample recording forms for program phases are provided.

6.51 The West Virginia System

Author:
John D. Cone *et al*
Available from:
The West Virginia System
311 Oglebay Hall
West Virginia University
Morgantown, West Virginia 26506
(304) 293-2511
(304) 293-2360
Date of Publication:
1978
Cost:
$40 to $140
Format:
Three-ring binders, approx. 200 pages each
Description:
The West Virginia System meshes objectives of a number of major published curricula. Scope, sequence, and correspondence charts serve as reference. Method cards contain: 1) the skill area, 2) objective, 3) mastery criterion, 4) prerequisites, 5) student grouping (individual, small, or large amount of supervision needed), 6) method, 7) materials and equipment, and 8) the source of the objective. *The West Virginia System* uses the self-graphing universal data sheet, and instructions for its use are included in each volume.

The West Virginia System, like others, uses the phasing out of direct physical prompting to verbal prompt to independent performance by the student. *The West Virginia System* areas are:

- Sensory Zone—tactile, auditory, and visual responsiveness;
- Primary Zone—gross and fine motor, toileting, eating, dressing, social interaction, washing-grooming, receptive language, expressive language;

- Secondary Zone—writing, recreation-leisure, time, using numbers, reading, vocational, domestic behavior, using money.

6.52 Working With Parents and Infants: An Interactional Approach

Author:
Rose M. Bromwich
Available from:
University Park Press
500 North Charles Street
Baltimore, Maryland 21201
(800) 638-7511
Date of Publication:
1981
Cost:
$19.95
Format:
Paperback, 384 pages
Description:

Working with Parents and Infants describes an interactional approach to intervention with high-risk infants based on the literature relating caregiver responsiveness with child developmental outcome. The Parent Behavior Progression (PBP) is presented as the assessment tool for implementing the interactional model. The PBP is designed to be used by staff of infant programs to sensitize them to the feelings, attitudes, and behaviors of parents. The goal of the interactional model is to promote parental satisfaction with infant/parent interactions to create an environment for optimal development.

The PBP is divided into six levels, each consisting of a number of behaviors: 1) parent's enjoyment of the infant; 2) sensitivity and responsiveness to behavioral cues; 3) mutually satisfying interactions; 4) provision of materials, activities, and experiences suitable for developmental level; 5) initiation of new activities based on experience or intervention; 6) anticipation of new needs and viewing child's needs in context of family.

The author cautions that the sequence of levels is a framework for normal development and cannot be rigidly followed as a hierarchy for intervention. The PBP is not intended for use by parents. Rather, it should be used as a tool by professionals to support positive parenting behaviors and help the parent acquire more of them. Recommendations for the use of the PBP and 30 case histories illustrating its use are provided.

The appendices include the two forms of the PBP (birth to 9 months and 9 to 36 months).

Index of Titles by Topic

A curriculum may be indexed under more than one topic area. See page 56 for a complete list of curricula in this index.

Age range (developmental) covered in curriculum—
Birth to one: *6.3, 6.19, 6.49*
Birth to two: *6.3, 6.5, 6.17, 6.20, 6.26, 6.28*
Birth to three: *6.9, 6.10, 6.12, 6.13, 6.18, 6.24, 6.25, 6.27, 6.28, 6.32, 6.33, 6.38, 6.44, 6.45*
Birth to four: *6.30*
Birth to five and six: *6.1, 6.6, 6.8, 6.14, 6.21, 6.22, 6.43, 6.46, 6.47*

Autistic, Curriculum for: *6.16*

Comprehensive curricula covering most developmental domains: *6.2, 6.3, 6.6., 6.8, 6.13, 6.14, 6.21, 6.22, 6.24, 6.25, 6.27, 6.33, 6.39, 6.40, 6.42, 6.45, 6.46, 6.47, 6.48*

Curricular packages combining other curricula: *6.29, 6.51*

Developmental (normative) sequencing: *6.2, 6.6, 6.14, 6.22, 6.24, 6.25, 6.30, 6.37, 6.39, 6.48*

Down's syndrome, Curricula for: *6.15, 6.48*

Functional sequencing: *6.1, 6.3, 6.33, 6.38*

Hearing impaired, Curricula for but not necessarily limited to: *6.9, 6.35, 6.43*

JDRP (materials produced by JDRP-approved HCEEP Demonstration projects): *6.8, 6.10, 6.15, 6.16, 6.20, 6.31, 6.33, 6.39, 6.43, 6.46, 6.47*

Language curricula: *6.2, 6.9, 6.31, 6.35, 6.44, 6.50*

Motor curricula: *6.4, 6.10, 6.36, 6.49*

Motor impaired, Curricula for but not limited to: *6.1, 6.3, 6.7, 6.11, 6.23, 6.31, 6.34, 6.38, 6.40, 6.41, 6.42*

Neonate, Curriculum for: *6.19*

Nonhandicapped, Curricula for (but useful to intervention programs): *6.28, 6.32, 6.44, 6.49*

Parent-oriented materials: *6.8, 6.9, 6.10, 6.12, 6.13, 6.16, 6.17, 6.20, 6.23, 6.28, 6.32, 6.35, 6.40, 6.48, 6.49, 6.52*

Piagetian-based, all or part: *6.3, 6.5, 6.13, 6.14, 6.17, 6.19, 6.20, 6.22, 6.26, 6.27, 6.33, 6.40*

Social curriculum: *6.37*

Spanish-language edition available: *6.23, 6.39*

Visually impaired, Curriculum for but not necessarily limited to: *6.21*

Chapter 7

Supplemental Resources for Locating Infant Intervention Curricula and Materials

by Joan D. Anderson and James O. Cox

The following resources are divided into two groups. *Materials* notes 17 resources that identify screening, assessment, curricula, and related early childhood special education materials. *Organizations* lists names, addresses, and telephone numbers of 17 national organizations that can provide information about infant intervention and special education. Most of these organizations will respond to individual and specialized requests.

Materials

Adaptive Performance Instrument is a criterion-referenced assessment device designed for severely/profoundly handicapped children birth to age 2 years. A trained administrator can complete the initial assessment in four to six hours and the quarterly follow-up assessments in one to two hours. The instrument focuses on assessing functional behavior. Some norm-referenced data are available. The instrument, three administration guidebooks, and record forms cost about $30. Available from: Dale Gentry; Special Education, College of Education, University of Idaho; Moscow, Idaho 83843 (208/885-6159).

A Bibliography of Screening and Assessment Measures for Infants (1980) was compiled by Johnson and Kopp at the Early Childhood Research Institute at the University of California at Los Angeles. This 32-page paperbound document reviews 69 measurement instruments which have assessment items for children two and one-half years or younger. Cost is $2.50. Available from: REACH; Graduate School of Education, Moore Hall, UCLA; Los Angeles, California 90024 (213/825-2702).

Catalog of Early Childhood Curricula Resources was developed by Davis and Robinson at Meyer Children's Institute in Omaha, Nebraska. This document is in press and when completed will be distributed free in Nebraska and will cost about $10 for out-of-state requests. Available from: Meyer Children's Rehabilitation Institute; 444 S. 44th Street; Omaha, Nebraska 68131 (402/559-7236).

Curricula and Instruction for Young Handicapped Children: A Guideline for Selection and Evaluation (1981) was prepared by Fewell (DuBose) and Kelly at the University of Washington. This 16-page series paper provides a discussion of the theoretical foundations of curricula and lists 45 curricula references in an appendix. Single copies are available at no cost from: WESTAR; 215 University District Building, JD-06; 1107 N.E. 45th Street; Seattle, Washington 98105 (206/543-8565).

The Curriculum Syllabus: Resources for Programming Handicapped and Developmentally Delayed Infants and Toddlers (1979) was developed by the RHISE staff at Rockford, Illinois. This 70-page paperbound document describes 56 resources useful to early interventionists. Cost is $3.50. Available from: Project RHISE, Children's Development Center; 650 N. Main Street; Rockford, Illinois 61103 (815/965-6766).

Curriculum Utilization Guide (1981) was developed by Dunst at George Peabody College. Manuscripts are available from: Harris Gabel; OUTFIT Project, George Peabody College, Box 15; Nashville, Tennessee 37212 (615/322-8425).

Early Childhood Curriculum Materials: An Annotated Bibliography (1976) was compiled by Harbin and Cross. This 125-page document provides an overview of 64 commercially available curricula that can be adapted for use with young handicapped children. Available (ERIC No. ED 119 409) from: ERIC Document Reproduction Services; P.O. Box 190; Arlington, Virginia 22210 (703/841-1212).

Educational Products for the Exceptional Child: A Catalog of Products Funded by the Bureau of Education for the Handicapped (1979) was compiled by Biospherics Incorporated. This 900-page book lists

descriptions of over 600 products, about one-third of which were developed by early childhood projects. The book costs $60. Available from: ORYX Press; 2214 N. Central Avenue; Phoenix, Arizona 85004 (602/254-6156).

Infant Assessment: Issues and Applications (1979) was edited by Darby and May. This 245-page paperbound book deals with general issues related to the assessment of handicapped and at-risk infants and specific applications for various handicapping conditions and settings. The bibliography lists 132 selected references for development, assessment, and intervention. Cost is $6. Available from: WESTAR; 215 University District Building, JD-06; 1107 N.E. 45th Street; Seattle, Washington 98105 (206/543-8565).

Infants and Toddlers Resource Guide for Parents (1981) was compiled by Flamboe, Driemar, and Evans at the University of Wyoming. This 96-page paperbound document lists approximately 600 resources in 24 different categories. Available from: Project WISP; Box 3224, University Station; Laramie, Wyoming 82071 (307/766-6145).

Linking Developmental Assessment and Curricula was written by Bagnato and Neisworth. This 368-page hardcover book discusses philosophy, purpose, and practice of selecting assessment and curriculum procedures. The book costs $27.50. Available from: Aspen Systems Corporation; P.O. Box 6018; Gaithersburg, Maryland 20877.

National Special Education Curriculum Guide Survey—Final Report (1979) was compiled by the Indiana Department of Public Instruction. This 25-page paperbound document lists 185 curricula for children from preschool to high school. Available from: Handicapped Learner Materials, Special Materials Project; 2nd Floor, 624 E. Walnut Street; Indianapolis, Indiana 46204 (317/636-1870)

Planning Programs and Activities for Infants and Toddlers: A Bibliography (1975) was compiled by Cross. This 37-page document contains information on curricula, activities, resources, materials for parents, and training films. Available (ERIC No. ED 112 545) from: ERIC Document Reproduction Services; P.O. Box 190; Arlington, Virginia 22210 (703/841-1212).

Product Listing: An Annotated Bibliography of Materials Developed by Eastern HCEEP Programs (1978) was compiled by Cox, Patten, and Trohanis. This 92-page document describes approximately 190 items categorized into five sections. It is available (ERIC No. ED 161 225) from: ERIC Document Reproduction Services; P.O. Box 190; Arlington, Virginia 22210 (703/841-1212).

Resource List—Infant Stimulation and Programming was compiled by the Early Intervention Program at the University of Missouri. This 2-page photocopy paper lists 28 resources. Available from: Ruth Frior, Early Intervention Program; 515 S. 6th Street; Columbia, Missouri 65211 (314/882-3741).

Selected Bibliography of Resources for Infants and Toddlers (1979) was compiled by the staff of Project Optimus. This 20-page photocopy paper lists over 250 resources in 10 categories. Available from: Project Optimus, South Shore Mental Health Center; 77 Parkingway; Quincy, Massachusetts 02169 (614/471-0350).

What's Where: A Catalog of Products Developed by HCEEP Projects (1980) was compiled by Jackson and May. This 80-page spiral-bound document lists 126 print and nonprint materials for use with young handicapped children. Available from: WESTAR; 215 University District Building, JD-06; 1107 N.E. 45th Street; Seattle, Washington 98105 (206/543-8565).

Selected Organizations

The Association for the Severely Handicapped (TASH)
7010 Roosevelt Way, N.E.
Seattle, Washington 98115
(206/523-8446)

The Carolina Institute for Research on Early Education for the Handicapped (CIREEH)
University of North Carolina
Frank Porter Graham Child Development Center
Highway 54 Bypass-West
Chapel Hill, North Carolina 27514
(919/966-4121)

Division of Early Childhood (DEC)
Council for Exceptional Children
1920 Association Drive
Reston, Virginia 22091
(703/620-3660)

Project Research on Early Abilities of Children with Handicaps (REACH)
Graduate School of Education
Moore Hall
UCLA
Los Angeles, California 90024
(213/825-2702)

Regional Resources Center Program
Applied Management Sciences
Suite 701
962 Wayne Avenue
Silver Spring, Maryland 20910
(301/585-8181)

United Cerebral Palsy Research and Education Foundation
66 E. 34th Street
New York, New York 10016
(212/889-6655)

Education Commission to States
300 Lincoln Tower
1816 Lincoln Street
Denver, Colorado 80295
(303/861-4917)

Educational Resources Information Center (ERIC)
National Institute of Education
Washington, D.C. 20208
(202/254-5040)

Handicapped Learner Materials—Special Materials Project
2nd Floor
624 E. Walnut Street
Indianapolis, Indiana 46204
(317/636-1870)

The Institute for the Study of Exceptional Children
Infant Laboratory of Educational Testing Service
Rosedale Road
Princeton, New Jersey 08541
(609/921-9000)

INTER-ACT—The National Committee for Very Young Children with Special Needs and Their Families
Geneva Woodruff
Project OPTIMUS Outreach
South Shore Mental Health Center
77 Parkingway
Quincy, Massachusetts 02169
(617/471-0350)

Kansas Research Institute for Early Childhood Education of the Handicapped
Department of Human Development
130 Haworth Hall
University of Kansas
Lawrence, Kansas 66045
(913/864-4840)

Association for Retarded Citizens (ARC)
2709 Avenue "E" East
Arlington, Texas 76011
(817/261-4961)

National Association of State Directors of Special Education (NASDSE)
1201 16th Street, N.W.
Suite 610E, NEA Building
Washington, D.C. 20036
(202/833-4193)

National Center for Clinical Infant Programs
815 15th Street, N.W.
Suite 600
Washington, D.C. 20005

National Information Center for Special Education Materials
University of Southern California
University Park
Los Angeles, California 90008
(800/421-8711)

Special Education Programs/Early Childhood Section
U.S. Department of Education
400 Maryland Avenue, S.W.
6th and D Streets
Donohoe Building, Room 3120
Washington, D.C. 20202
(202/245-9722)